Dystopia Is Upon Us. Are You Ready?

RevoJution

CONTENTS

MEET YOUR NEW TF: A DUCK.

"QUACK. I AM CS50'S DUCK DEBUGGER (DDB), AN EXPERIMENTAL AI FOR RUBBER-DUCKING. QUACK QUACK."

by SOPHIE DEPAUL '27

*I*n late night hours before the p-set is due, the CS50.ai duck greets struggling students. It takes code input, questions, and requests. It explains computer science terminology and concepts, corrects bugs, and provides pseudocode for students struggling with computer science.

CS50 is Harvard's introductory Computer Science course, and one of the most popular courses offered at Harvard. Additionally taught online (edX) and at Yale, it is taught by Professor David Malan and a large team of TFs. In a huge class with hundreds of students, it can be hard to get personal attention and help. The most personal the course gets are with mandatory two hour sections where students do small group learning with their TF, as well as all-staff and small group office hours.

Luckily, this duck could one day replace your TF. "I don't have to go to office hours … Instead, I can ask the rubber duck," said CS50 student, Seager Hunt '27. Students struggling don't have to worry about making time in their busy schedules for office hours with CS50.ai now available 24/7. "If you have specific questions you want to ask … I think that the duck could definitely take over the role [of a TF]. And in terms of the office hours, I think so," stated another CS50 student, Carly Gelles '27.

The duck has many advantages for the students in CS50. "At the individual office hour sessions, there are five or six [teaching fellows] there and [the session is] only an hour long, so the TF is rotating between each person. So, you only end up getting maybe ten minutes of help," said Gelles. "For the times that I've went to office hours, somebody else would have some major problem and the TF would end up spending a bunch of time helping… But the duck is just always there. The duck will always help you."

CS50.ai is new to the CS50 course this year and is an adaptation of ChatGPT. The heads of the course created and provide it to the students. Professor David Malan, in an interview with the *Independent*, provided background on how the duck came to be. "We be-

gan to experiment this past spring with OpenAI's [software] to understand what's possible … And some of CS50's team, among them some of our undergraduate staff from Harvard and Yale, spent much of this summer prototyping ideas in preparation for fall."

While the duck is not a "cheating tool" and the teaching team encourages its usage and educational opportunity, passing off the work of AI as your own is a violation of academic honesty. "The duck's behavior is guided by "prompts" that we provide to the underlying APIs [such as], '*You are a friendly and supportive teaching assistant for CS50. You are also*

CS50

a rubber duck. Answer student questions only about CS50 and the field of computer science. Do not answer questions about unrelated topics… Do not provide full answers to problem sets,' as this would violate academic honesty," explained Professor Malan, discussing the duck's intended limitations for students.

Students have mixed reviews in regards to the duck's obedience to these guidelines. "Sometimes it tries to give solutions but doesn't fully explain why they work," said Gelles. Hunt has had more consistency with the duck's abilities to help. "It explains why the corrections need to be implemented and what the code gains from these different adjust-

ments, so I get an understanding of why these things need to be done."

In comparison, ChatGPT, OpenAI's chatbot, has been known to give incorrect or misleading answers. A 2023 study from Purdue University that compared GPT's answers to 517 Stack Overflow (a Q&A website for programmers) questioned and assessed the chatbot's correctness and consistency, and concluded that "52 percent of ChatGPT answers are incorrect and 77 percent are verbose." CS50.ai is no stranger to these issues. "It's right most of the time, but sometimes there are bugs that it can't detect," Hunt claimed.

The duck does not lead students to believe it is always right. In fact, the duck explicitly says, "My replies might not always be accurate, so always think critically and let me know if you think that I've erred." Staff, consisting of TFs and Professor Malan, can then confirm or correct the duck's replies. Alongside the help of the duck, human instructors remain just as relevant. "I think having a person teaching a class for a section and going over the concepts is definitely helpful," said Gelles.

Professor Malan sees the duck being used for future CS50 classes, hopeful that the system will continue to improve. "Before long, for instance, we hope it will be easier for us to 'teach' the duck how to answer certain questions differently or better, as by simply telling the duck without having to write code or configuration."

The duck's role in CS50 will continue to grow and advance, becoming a core and exciting part of the curriculum. "While some of the CS50 duck's functionality is programming-centric, its ability to engage in curricular 'conversations' certainly translates to other courses beyond CS and beyond STEM more generally," Malan stated. So, just because you missed the duck in CS50, doesn't mean it won't pop up as a 24/7 TF in your future.

SOPHIE DEPAUL '27 (SOPHIE_DEPAUL@COLLEGE. HARVARD.EDU) HASN'T COMPLETED A SINGLE CS50 PROBLEM SET WITHOUT THE AI DUCK.

GRAPHIC BY ANNELISE FISHER '26

HARVARD .5

WHILE STIGMAS CAN DISCOURAGE STUDENTS FROM TAKING TIME OFF, THE EXPERIENCES OF GAP STUDENTS BEG TO COUNTER THIS CAMPUS CULTURE.

BY LAYLA CHAARAOUI '26 AND JULIA TORREY '27

Taking time off can seem like an unfeasible task. While four years of college can be overwhelming, many students attempt to juggle classes, clubs, and work with no breaks, often in fear of falling "behind." However, this consistent grappling for a work-life balance may lead many students to feel academic or social burnout, or struggle with various aspects of their mental health. When school gets tough or your life changes trajectory, the option for taking time off seemingly becomes a task in-reach.

A guide from Harvard College Student Voices found that 340 students, over 20% of the Harvard Class of 2024, deferred enrollment due to COVID-19. "After taking remote classes for the fall semester, I realized that I did not get nearly as much out of the academic experience as I did with in person classes, and therefore decided to take the spring semester off," Dhiya Sani '23.5 explained. "At the time, Harvard sophomores were not invited back to campus, so we figured that during 2021 spring, we could either continue with remote school, or find a remote internship and earn back a 'real' semester on campus in the future." Sani's entire blocking group joined her in the latter option, unenrolling for the spring semester as well.

To an extent, the stigma surrounding taking time off permeates campus culture. Yet, students who have pursued this somewhat atypical route remain certain that leaving campus did not take away from their experience, and instead added to it. "Please do not be afraid or fall into the stigma that if you're taking a semester off, you're being lousy, you can't handle the academic rigor, [or] that you don't belong at Harvard," Soleei Guasp '26.5 said, who researched and worked during her gap semester. "It was one of the best decisions I've made in my entire life, and it really transformed my experience and will transform the next four years."

After struggling with both her mental and physical health, Guasp determined taking a gap semester would be the best fit. "Going from high school to college was a very huge transition for me. I had recently become financially independent completely, so I was living on my own," she said. "Being a part of a college and being a first-generation low-income student was a very big transition. It took a lot getting used to the academic rigor. I think it was a combination of those two that made me want to decide to take a leave."

In Sani's case, the pandemic prompted her and her fellow classmates to take a semester or full year off in order to gain the most from their Harvard educations. Some students, like Guasp, sought time off for a mental, physical, and personal break. Others at Harvard have pursued gap years for a vast array of reasons, like pursuing their career dreams, gaining real-world experience, and taking part in new opportunities.

"I decided to take time off to fulfill one of my dreams," Caitlin Beirne '25 said. Beirne took a gap year after her sophomore year to pursue her goal of working as a mainstage performer on the Disney Cruise Line—a dream, she noted, that she wrote about in her Harvard supplemental essay. "I learned people skills, practical skills, [and] customer service skills," she said.

Beirne averaged 13 shows per week, traveling to Florida, Nassau, and Castaway Cay, Disney's private island. She and her cast worked as character greeters, "helping out characters like Mickey, Minnie, and the princesses and heroes during their meet and greet times." While Harvard provides a world class education, there are still many lessons that time away from school can teach.

She learned essential leadership skills, too, working as cast vocal captain and a character greeter. "I improved my overall leadership as I became a Disney trainer and I got to graduate from the Disney Emerging Leaders Program, which was such an incredible opportunity. I'm very thankful for that."

Sani held a remote internship and remained near Harvard's campus. "I lived in an apartment in Boston with five of my roommates from college, and we all had remote internships. My internship was a research position at Massachusetts General Hospital in the Ammon-Pinizzotto Center for Women's Mental Health. The project I worked on focused on postpartum psychosis and involved evaluating rates of major malformations among infants exposed to atypical antipsychotics in utero. I absolutely loved the work I was doing!"

Guasp spent her time researching computational biology with genomics and ancestry in the Ramachandran Lab at Brown University and participating in the AmeriCorps program, "improving academic excellence for urban students." Her time off made her realize that her initial educational plans may not actually be suited for her. "I initially came into Harvard wanting to do Computer Science and Biology, but I didn't find myself as passionate while I was at the lab. Although I really enjoyed my lab, I realized that it wasn't necessarily what I envisioned myself doing for the rest of my life," she explained.

"My experience at the AmeriCorps program was the reason I thought about this. I really have always been interested in education, educational policy, and curriculum reform, and it made me realize how passionate I was about it when working with students and how a lot of the issues that students face in schooling today are the ones I want to focus on and work on for my career." Now, Guasp takes new classes at Harvard, intending to concentrate in Government with a secondary in Educational Studies.

Guasp's time off allowed her to improve herself academically and emotionally, taking advantage of the community she found at Brown. "Going into a different community at Brown University, I got to meet a lot of new people, experience new things, and take a break from the environment of Harvard and the academic rigor it gave," she said. "Once I came back, I didn't find myself as stressed."

Since returning from her time away, Sani also feels tangible benefits from her gap semester. "I am mostly reaping the benefits of my semester off now as a second semester senior still on campus in the Fall of 2023, when the majority of my social class graduated this past May." While some of Sani's friends have left campus, the extra time that she has gotten to spend at Harvard has left her feeling grateful and inspired.

"I feel so lucky to be living in Eliot [House], taking in-person classes, hanging out with friends in an unrestricted way, and experiencing what truly feels like a bonus semester. Before taking time off, I was pretty traditional in my view of education in that I was set on graduating in four years. But, taking time off was one of the best decisions I have made, teaching me that sometimes, taking a risk and stepping out of your comfort zone can be well worth it."

Beirne was able to enrich her Theater, Dance, and Media concentration by her real-world experience as a performer. "I can also bring new perspectives and experiences back to the Harvard community and hopefully contribute in a positive way," she said. While Beirne reflected that the transition back to school and adjusting back to homework and classes was a bit difficult, "to make this dream a reality, [she] would do it again in a heartbeat."

Sani recommends those who are considering taking time off to discuss with a support system what your options entail. "I worked with my advisor to devise a plan for how I would use my semester off to my advantage, while ensuring I would still finish my requirements in time and stay involved with the extracurriculars I wanted to on campus. So, my advice would be to plan ahead–that way, your semester off can be as additive as possible to your college experience."

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GRRAPHIC DESIGN BY RANIA JONES '27
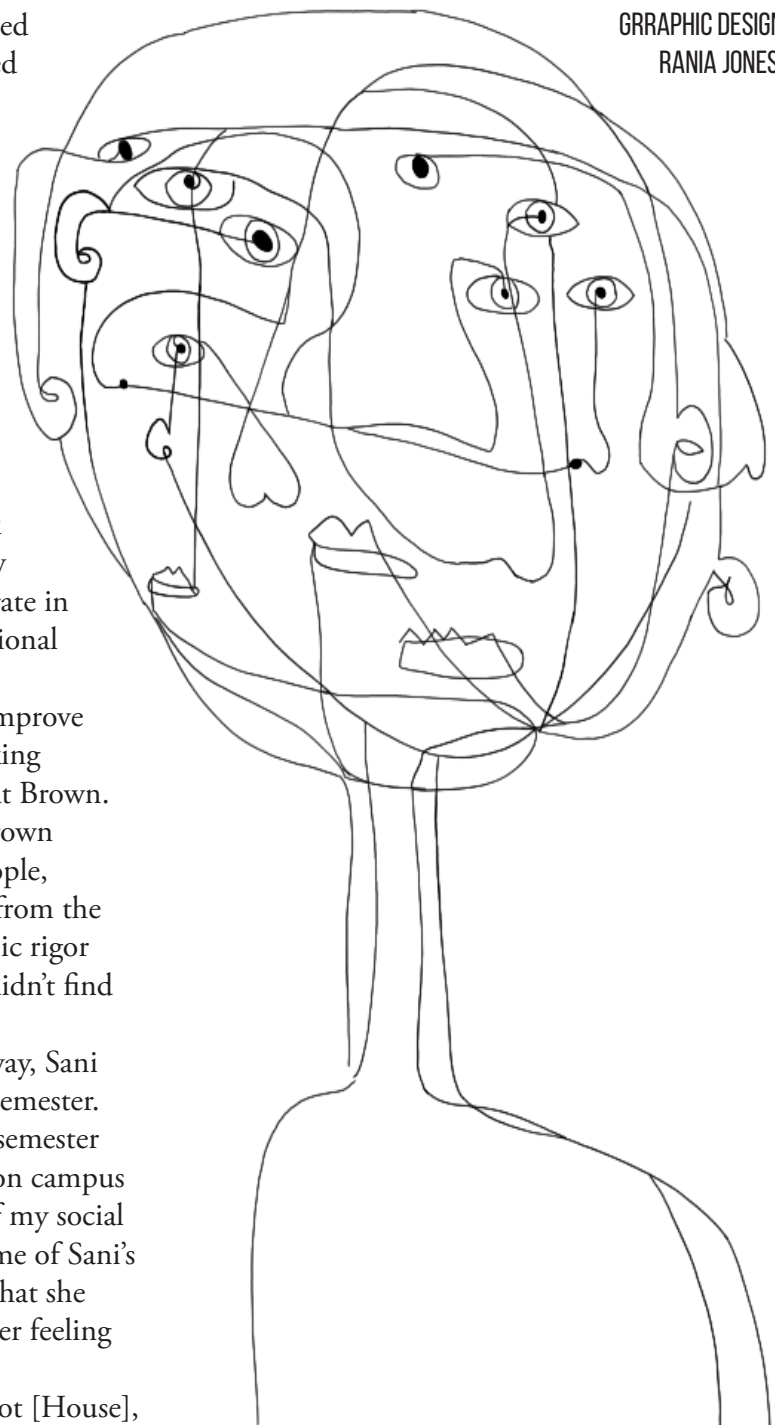
CONVERSATIONS BETWEEN ART AND MEDICINE

YOUR RADIOLOGIST IS NOW TRAINED AT THE HARVARD ART MUSEUMS.

BY SACHI LAUMAS '26

A photo of an older woman in a bright yellow coat materializes on the screen. The audience cannot see her face, but she appears in motion, with purpose and somewhere to be. A ray of sun lands on her hair, creating a prism of light at her shoulders. This photo and close-looking exercise began "Seeing in Art and Medicine: A Conversation," a public event held at the Harvard Art Museums (HAM) last Thursday, October 5th. The event coincides with the new temporary exhibition at the HAM similarly entitled "Seeing in Art and Medicine," inspired by an interdisciplinary collaboration between the art museums and Brigham and Women's Hospital.

The institutions collaborate on a program that enables radiology residents at Brigham to visit the art museums multiple times over the course of a year and engage in close-looking sessions. These discussion sessions teach the residents how their radiology toolkit applies to art and visual media past X-Rays and CAT scans. It prompts them to consider how art and medicine collide in visual imagery and to grapple with questions of empathy, agency, and humanity in art. In recognizing these ideas through art, participants begin to reevaluate these same themes' roles in practicing medicine.

During the talk, the founders of the program engaged in a discussion about how the project came to be, as well as the mutual benefits both institutions have reaped since its inception. This included former Director of Academic and Public Programs at the Harvard Art Museums David Odo, radiologist at Brigham and Women's Hospital Dr. Hyewon Hyun, and HAM curator Jen Thum.

The collaboration with the radiology residents places an emphasis on learning in order to emphasize the importance of self-reflection and patience in such a high-stakes and high-pressure career of medicine. "There is that thing [in medicine] about being right. If you're wrong you can harm a patient … It's a tremendous amount of pressure to put on people who are still

growing and forming their identity as people," Dr. Hyun said. She emphasized the importance of looking inward *during* residents' medical training rather than *after* early burnout from the pressure of training.

She went on to describe residents as, "still in this prolonged adolescence … they have very little control over their call schedule and life." In this way, many trainees feel discouraged from sharing their own opinions because they are used to deferring to a higher-up, such as an attending physician, in the hospital. The magic of art and close-looking validates all opinions, and being in museums can generate certain free-flowing discussions and confidence that reading X-Rays cannot.

The entire objective of the program is to engage two disciplines which superficially appear to have little academic overlap and dedicate sacred time to art during rigorous resident training. Most similar programs across the country follow a field trip model with only one or two visits to museums annually, but the Brigham and HAM program consists of five three-hour sessions and two virtual sessions over the course of a year. To Odo, "carving out time and space to do this work … to give it the importance it needs," matters.

The impact of the program is far from one-sided. In order to develop the program, Odo visited Brigham and Women's Hospital, which opened his eyes to the harsh reality of medical training and gave him a

more realistic view of the life of the medical resident. He attributed the residents, who were mostly formally trained in the sciences, to offering him a differing perspective on the arts and engaging with it in unique ways. Radiologists and art historians' mutual interest in close-looking and visual analysis connects the two fields in a way that does not seem obvious on the surface.

This common ground between the disciplines is key to the program's continued success. Upon learning of the collaboration and program, the connection between the two may appear obvious. "We tend to think in the art museum that we have a corner on that market [of close looking]…but we don't," Odo joked near the end of the talk.

It may seem that the close-looking sessions in the museum would have little technical benefit to radiology residents who spend hours in the hospital learning just that. But, according to Odo and Hyun, the most important part of each session is the discussion that arises as a result of the close-looking. The museum is a place for conversations that residents might be cautious of having within hospital walls, such as discussions of the role of hierarchy in medicine and how that may impact patient lives. As Odo said, "we let the conversation and discussion meander…it's not a one-sided conversation."

Visitors to the Harvard Art Museums can experience this collaboration themselves through the current exhibition on the third floor entitled "Seeing Art in Medicine." The exhibition engages with the audience and offers them the opportunity to see art through the lens of medicine. It includes works that the radiology residents themselves examine during the program coupled with interactive prompts to recreate the experience of the program. Viewers can apply these themes and lessons in art to their own lives, just the radiology residents do.

BY SACHI LUMAS '26 (SLAUMAS@COLLEGE.HARVARD.EDU) CAN'T DECIDE IF SHE WANTS TO PURSUE MEDICINE, ART HISTORY, OR BOTH.
GRAPHIC BY RANIA JONES '27

COMMUNITY SPOTLIGHT: CLUADIA GOLDIN

PRESENTING HARVARD'S NEWEST NOBEL PRIZE WINNER.

BY ANA-MARA LEPPINK '27

On October 9th, Harvard University increased its list of awe-inspiring Nobel Prize Laureates by one. Claudia Goldin, Harry Lee Professor of Economics, was awarded the prize "for having advanced our understanding of women's labor market outcomes," according to the Nobel Prize's official website. Jakob Svensson, Chair of the Committee for the Prize in Economic Sciences, declared that Goldin's meticulous research into women's earnings and their role in the labor market revealed reasons for developments in labor market participation—or lack thereof—over time. Additionally, she proposed what key barriers need to be addressed as we strive towards closing the gender wage gap and achieving equity in economic opportunity for men and women. Last week, the *Harvard Independent* interviewed Goldin in pursuit of a deeper insight into her fascinating work.

Claudia Goldin is an Economic Historian who earned her Bachelor's Degree in Economics from Cornell University and her Master's and Doctorate degrees in Economics from the University of Chicago. "I think about big issues and big changes in economies over long periods of time," she stated in her interview. Her prize-winning research draws upon over 200 years of data and concerns female participation in the United States' labor force throughout history.

Goldin asserted that the origins of her interests in women's participation in the economy and the interaction of home and work came out of her earlier work on race and the labor force. The subject of her PhD dissertation was urban slavery in the American South, and later she explored the reasons for the shared impoverishment of African-American and White women following the end of the Civil War despite the race-driven disparities between the work they were doing, amongst other topics pertaining to womens' positions in the labor force.

When she came to Harvard, Goldin shifted her focus to women's careers and families, inspiring her book *Career & Family* in 2021. Goldin's work encompasses far more than was highlighted by the Nobel Prize Committee, including important work on the history of education.

In the interview, Goldin stated that the Nobel Prize Committee highlighted two aspects of her comprehensive research. "My work tries to understand the reasons why [women enter the labor force] and the impacts that it has [on society]." In addition to investigating women's roles in the labor force throughout history, she is interested in their present situation. "When we peer into the labor force, we see ... gender differences in what men and women do in the labor force, and the question is why and what impact it has." She grappled with this key question of why, despite there being large changes in education and professional schools with women constituting a larger share of college graduates, many of them still earn less than men in the same field.

Essentially, this boils down to inequality in wages arising as a result of gender inequity. When a couple has a child, one of them usually makes changes to their employment to become the designated "on-call" parent, whilst the other has the flexibility to pursue their career with fewer adjustments. Traditionally, Goldin distinguishes between the "flexible job" of the on-call parent and the higher-paying, less accommodating job retained by their partner. "The larger the difference in the earnings between the two jobs, the more money would be left on the table if both parents took the more flexible job," she explains. "Therefore, they are enticed by the labor market to give up couple equity ... and because of that, they essentially throw gender equality under the bus." Women certainly seem to be the ones compromising their career more frequently by taking, on average, longer maternity leave than the paternity leave of their male spouses: according to a study conducted at Ball State University, only 5% of fathers take two or more weeks of leave despite being entitled up to twelve weeks of unpaid leave by the Federal government.

Goldin emphasizes three main strategies when it comes to how to reduce the difference in earnings between men and women. The first would be to either make high-paying, desirable jobs more flexible and thus more compatible with childcare, or make flexible jobs become more productive. Goldin cites the Covid-19 pandemic as an example that perfectly exhibited the feasibility of this option. Another possibility involving government policy might be to subsidize care goods, as "someone may still have to be the on-call at-home parent, but the cost of care is a lot less."

The most revolutionary change would be to alter the traditional family structure through distributing the on-call parent role more evenly between men and women, or "flipping a coin," as Goldin has named it. "You would still have couple inequity, but you wouldn't have gender inequality." Naturally, she admits that this is a more precarious approach, because it requires us to rethink or change gender norms.

Regarding her position at Harvard, Goldin explains that she thinks of herself as a "researcher-teacher," the terms 'researcher' and 'teacher' being mutually inclusive. "I cannot do the research that I do, or any research, without being a teacher…The only way you know if you're correct about something is if you can say it to someone and have them understand it." Goldin expounds that sharing her knowledge with her students is the only way she can test if it is actually true.

Professor Goldin came to Harvard University in 1990 and is currently the Henry Lee Professor of Economics. Not only was Goldin the first woman to join the University's Economics department, she is the third woman to win the Prize in the Economic Sciences category and the first to win it individually. In addition to her research, Goldin is a devoted teacher. This fall, she is teaching a Junior Seminar at the College called "Economics of Work and Family" that, according to the course's website, explores how "the most personal choices and life transitions" are decided.

Goldin's advice for Harvard students? First and foremost, she advises to "figure out what your passions are," admitting that this may be easier said than done, having started her own undergraduate degree with the intention of studying microbiology. "You shouldn't let anything stand in your way … Even if you didn't do very well in a course, that doesn't mean that you're not good at it—it may mean that it wasn't taught very well for you."

> "I CANNOT DO THE RESEARCH THAT I DO, OR ANY RESEARCH, WITHOUT BEING A TEACHER… THE ONLY WAY YOU KNOW IF YOU'RE CORRECT ABOUT SOMETHING IS IF YOU CAN SAY IT TO SOMEONE AND HAVE THEM UNDERSTAND IT."

ANA-MARIE LEPPINK '27 (ALEPPINK@COLLEGE.HARVARD.EDU) WILL BE ADOPTING GOLDIN'S LAST STATEMENT AS HER MANTRA DURING MIDTERM SEASON.

NEURAL NETWORKS AND NOVELTY: A WINDOW INTO HARVARD'S INNOVATORS

How three AI startups uplift humanity instead of replacing it.

by GAURI SOOD '26

" You are more than your resume."

This catchy slogan promotes a dynamic survey aimed to connect many disillusioned Harvard students to environments where they can do work that matches morals rather than a brand name. Kushan Weerakoon '05, co-founder of the startup-in-progress, described his intentions behind the idea: not to become rich and successful, but to reconnect spiraling Harvard students with their values.

KUSHAN WEERAKOON '05

Three interviews with three unique startup founders in the fields of career development, personalized assistance, and healthcare technology all echoed the same mission statement: perhaps the use of AI startups and large language models (at least, those created in part from the Harvard sphere) exist to maintain and uplift humanity's morality, not contribute to its creative demise.

"[People] end up funneling to jobs based on brand names or other things instead of culture or mission," began Weerakoon, who referenced a similar occurrence in his own college experience. Vocate—a temporary name for his startup—attempts to curb this by simulating a coffee chat through a series of short questions and feeding it into a large database that has available job opportunities labeled by their values.

The end result is a perfect match: students find job opportunities posted by companies with shared values and cultures. Weerakoon and his team aspire for their startup to rekindle the moral fuel that many Harvard first-years arrive with but quickly lose when being pulled into other heavily populated spaces. "I feel like I'm excited about my [summer] job now *because* of the culture…And everyone here doesn't have a deliberate way of doing that."

This approach of improving personal well-being and quality of life was enthusiastically similar to Avi Schiffmann, founder of *Tab*, a wearable AI necklace that functions as a personal assistant with a unique twist. The story behind his product ideation began while he was a student at Harvard. Schiffmann embarked on his educational journey with a feeling that all students face: overwhelmed. "I was terrible at taking notes [and] keeping track of things," said Schiffmann. "[I] tried using second brain tools like Notion, but they were such a pain to maintain." Schiffmann eventually paused his academic trajectory to pursue his startup with full energy and focus, and to remedy these problems.

Tab differs from any other transcription device through a seemingly simple yet brilliant ideology: two-way conversations with all-encompassing accuracy. Our current, most common forms of AI such as ChatGPT require exhaustive amounts of human-inputted data and information to generate answers, a process known as prompt engineering. Once you provide this AI with context, it gives you a quick answer. Such responses are often incorrect or not perfectly attuned to the user's question. Tab, however, uses a microphone to understand the *idea* of your conversations, not just a rote summary.

"It's not just what you say; there's a lot of emotional nuance in *how* you say things," said Schiffmann, hinting at a great human quality that AI currently lacks. Expression, modulation in tone, and pauses all contribute to the true meaning of a sentence, and Tab captures just that. According to Schiffmann, this is the essence of Tab; it's as simple as, "just an AI to talk to that has a context of your life."

In this simplicity lies a great opportunity for broadening the scope of the product and perhaps even the future of AI innovation. "We have primitive brains, but alien ideas all around us," said Schiffmann, as we are engulfed in our thoughts and need a tool for "offloading [our] memory management."

Schiffmann discussed the variety of customers who purchased from his successfully sold-out pre order, all of whom found early interest in the product. "[It included] everyone from people with severe ADHD, to government officials with tons of meetings, to gamers who need a 'Player 2' to help them think about their ideas." Tab holds considerable promise in revolutionizing several other fields; from customizing news feeds tailored to a user's conversations, to creating ever-present AI therapists with immediate access to clients. The possibilities seem endless.

Schiffmann's initial annoyance of notetaking was shared by a third innovator. William Shen '22, cofounder of AuxHealth, sought innovation in medicine. As a second-year student at Harvard Medical School and graduate of Harvard College, Shen aims to solve the constraints of time restrictions between a physician and patient, which currently contribute to an impersonal and rushed experience for the patient.

Shen recognized early on that most people used ChatGPT to answer their questions, but when talking with patients, a chatbot needs the capability to *ask* the questions. This technology "combines large language models with medical ontologies," in order to conduct a preliminary medical interview. Shen aspires for this USMLE-certified neural network to maintain the spirit of in-depth human connection: both by making doctor's lives easier and allowing patients to feel fully heard.

AVI SCHIFFMANN

With new technologies comes the fear of the unknown. Weerakoon describes AI as "asymptotically reaching human intelligence," a sentiment exemplified through prevalent public concerns of job security and machines taking over the planet.

From making doctor's appointments more meaningful to prioritizing ease and creativity with a tailored personal assistant, the promise of human-centric, value-focused AI innovation doesn't let us forget our humanity in the process of crossing new technological boundaries. These startups are key examples of ways we can use innovation to improve human fallacies instead of replacing it in totality. This combats common AI fears, and instead contributes to the possibility of a constructive and inspired future.

"Intelligence is the new transistor," concluded Schiffmann. "It's a fundamental primitive that you'll build things on, [and it] will enable all kinds of good things and all kinds of bad things… The goal is just to enable the good over the bad."

GAURI SOOD '26 (GAURISOOD@COLLEGE.HARVARD.EDU) HAS THE SUDDEN URGE TO DO A COMPUTER SCIENCE SECONDARY.
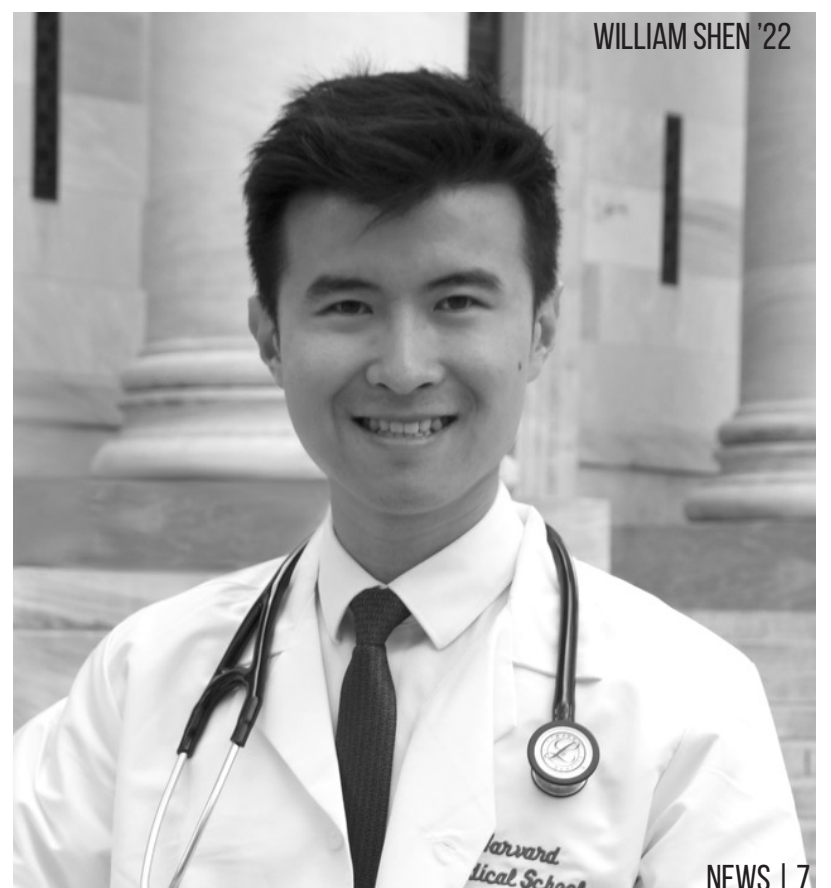
WILLIAM SHEN '22

A LEARNING ODYSSEY
HOW GENERATIVE AI CAN IMPACT THE STRUCTURE OF HARVARD CLASSES.

BY MEENA BEHRINGER '27

We are anxiously in-between the release of ChatGPT and its full effects on education, unable to imagine academia without it and unable to fully envision academia with it. And it is exciting. Artificial intelligence will prove transformational; a tool both students and professors must embrace.

But conversations and collaboration must remain at the forefront of how we learn. We must not rely on simply being told answers and seemingly right information, and as Harvard Professor Anna Wilson reminds us about ChatGPT, "it's not actually intelligent."

"You have to stop thinking that you can teach exactly the way you used to teach when the basic medium has changed," stated Houman Harouni, Harvard Graduate School of Education lecturer, in a GSE article written by Elizabeth M. Ross. While most Harvard professors agree that AI is here to stay and will only benefit teaching, they disagree on what role it should play in the classroom, as artificial intelligence has concurrently been integrated into our courses in ways that have rendered certain traditional methods obsolete. It simultaneously modifies what skills are focused on in the classroom and how students demonstrate their knowledge. The future of what our Harvard education and courses will look like remains uncertain— in this uncertainty, we must continue to learn from other living humans, not our screens.

We should all be immersing ourselves in the benefits of ChatGPT. Immediate access to knowledge is at our fingertips, and its accessibility transforms productivity. It can be a wonderful aid for students to answer their questions in layman's terms and effortlessly scour the web for evidence and sources. It can take on a personna to challenge our thoughts, ask us questions, and even incentivize us to 'think' deeper than it does.

But, ChatGPT really does not think. It simply scans through and regurgitates information from the internet, unable to provide any original idea or be imaginative, and, much of the time, it is wrong or spits out illegible responses. While most of the time it does give perfect answers to college-level math problems or provide a concise and factual essay draft, students are consequently told *how* to do something, rather than learn *why*. It's a stark contrast to the inherent curiosity of humankind.

Indeed, generative AI threatens higher education with the question: what skills are worth learning and what skills can be automated? Harvard Dean of Undergraduate Education Amanda Claybaugh remarked, "I think the answer is going to vary by discipline. For instance, it may well be fine for students in science courses to do the labs themselves then rely on generative AI to write up the results. But in a literature course, the writing is inextricable from the thinking and probably shouldn't be automated."

Unlike Google, ChatGPT understands user input, blurring the lines between clarifying questions and finalized responses. Moreover, it is technically impossible to detect when AI has been used, redefining what cheating is–currently technology is only 26 percent accurate at detecting AI-written text. Harvard's new

guidelines for ethically using generative AI gave professors free reign; course syllabi had to make their policy clear. Informational sessions held last August provided some structure for instructor use in STEM and writing courses.

The Economics 10 series, taught by Jason Furman and David Labison, dropped an essay assignment after an experiment proved ChatGPT work could pass Harvard classes. Furman tweeted, "Sadly, we are planning to drop the essay this coming year, in part because ChatGPT has reduced the marginal net benefit that comes from this essay." But where do we draw the line? Do we take away all minor assignments that had previously forced students to think?

Head section leader David Martin affirmed, "adding ChatGPT into the equation on that essay … tipped the balance of the cost-benefit analysis. If there is one part of the course that we are least confident is going to be good for student learning, it would be that part." Assignments must push students one step further in pursuit of academic integrity beyond what generative AI can produce in a second. In comparison to writing, students must understand the process themselves through solving problem sets. In a time crunch, generative AI can forgo this battle of confusion with quick answers and thorough explanations.

Chat GPT posed a seemingly immediate threat to writing. At Harvard, the first-year Expository Writing Course requirement fully banned the use of any artificial intelligence for any step in the writing process to emphasize its challenges. But, for English students, Wilson explained, "they want to go on to be creative writers. I think that a lot of English teachers at Harvard are sort of not really actually that concerned about students somehow using AI to take shortcuts because they know that our students do actually want to learn those skills." While the curiosity and academic integrity of Harvard students may reduce the outright use of ChatGPT for writing essays, students are inevitably using and relying on it.

Other professors integrated and encouraged AI use. Harvard Professor David Atherton's General Education 1067 class explored artificial intelligence's capacity for creativity for one unit even before the release of ChatGPT, easily expanding to integrate it. Regarding his other courses, Atherton says, "I think I will try to incorporate it a little later in the semester around Japanese poetry and trying to understand how Japanese poetry works. The students in that class actually produce their own poetry anthologies as one of the assignments. And I'm gonna make it very open to them if they want to use AI as part of that process there." Artificial intelligence as a learning tool and way to teach students how to think but will also impact who students turn to for help—or who they do not.

The CS50 AI Duck is a great example of such. Released the spring of 2023, the on-demand duck poses as a virtual teaching assistant to guide students through understanding and debugging code specific to the course. Instead of producing code like ChatGPT would, the duck attempts to guide students to the right logic. ChatGPT's ability to reproduce basic code parallels its dangerous ability to craft essays.

While turning towards a computer to seek help might seem to disrupt teacher relationships, it might just transform conventional learning methods into something new altogether. "Whether AI replaces human teachers is ultimately up to us humans," Harvard Computer Science Professor David Malan said, "but I do think AI is poised to amplify the impact of individual teachers. If so trained, AI could effectively enable teachers to help all the more students in parallel, at all the more hours, in all the more places."

In their journey of learning, students crave efficiency and maximizing productivity. Generative AI poses a wonderful tool for saving students time; however, it must not come at the expense of displacing conversation or threatening academic integrity. We must remember and fight against the potential for loss of the most valuable aspect of education—discussion and collaboration with other people.

Quotes have been adjusted to account for filler words and grammatical correctness.
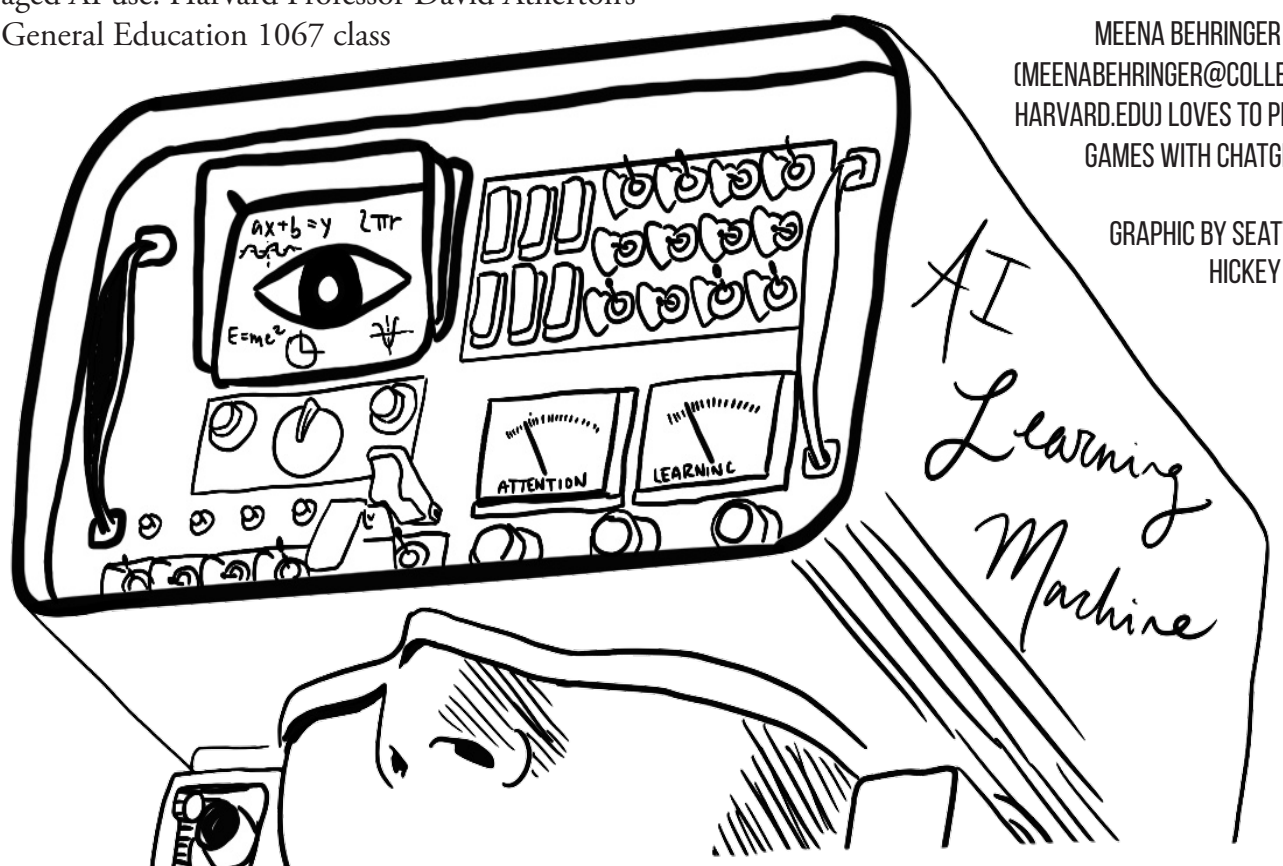
MEENA BEHRINGER '27 (MEENABEHRINGER@COLLEGE. HARVARD.EDU) LOVES TO PLAY GAMES WITH CHATGPT.)

GRAPHIC BY SEATTLE HICKEY '25

AI Learning Machine

HARVARD'S DOUBLE STANDARD FOR PALESTINIANS

Harvard's selective condemnation of violence exposes their harmful bias against Palestinians.

BY TOMISIN SOBANDE '26

I have been thinking about the concept of courage over the past few days—a concept to which Harvard University President Claudine Gay devoted her inaugural address on September 29th, 2023. She espoused lofty, noble ideas, such as "the courage of this University ... to question the world as it is," and "the responsibility to explore, define, and help solve the most vexing problems of society—the struggle against tyranny, poverty, disease, and war."

While taking leadership over a university such as Harvard brings an abundance of challenges, I had hoped that President Gay would stick to the idea of courage she so whole-heartedly addressed. This is why I find it cruelly ironic that not even more than two weeks later, our newest President and rest of administration seemingly lacked this trait, as seen through their lackluster responses in addressing the escalating Israel-Palestine conflict. It was apparent that there was little focus on the suffering of Palestinian victims and the safety and privacy issues facing Harvard's own students and community members.

We have been faced with the horrifying developments in Israel and occupied Palestine since Saturday, October 7th. The University has since released two statements and one video. The first collective statement—signed by 18 members of Harvard's administrative leadership—explained that the signatories were "heartbroken by the death and the destruction unleashed by the attack by Hamas that targeted civilians in Israel [that] weekend, and by the war in Israel and Gaza." The second statement, signed only by President Claudine Gay, does not extend any compassion to Palestinian civilian victims abroad or Palestinian students on campus.

The only acts of violence Gay addresses are "the terrorist atrocities perpetrated by Hamas." Harvard's administration has seemed to close its eyes to the violence that Palestinians face daily.

I do not doubt that our University's leadership is intentional in explicitly condemning violence against Israeli civilians. While the University might *implicitly* condemn violence against Palestinians in its arbitrary umbrella reference to the "the war in Israel and Gaza," there is no outright censure of the violence suffered by innocent Palestinian civilians due to Israel's attacks.

Not one statement released by Harvard condemns, or even *acknowledges* Palestinian suffering.

I wish Harvard leadership had the courage to condemn the indiscriminate bombing of apartment buildings, health facilities, and refugee camps by the Israeli military that the Prime Minister of Israel, Benjamin Netanyahu, proudly posts on social media, which even the United Nations categorizes as war crimes.

I wish Harvard leadership had the courage to name and condemn the doxxing and intimidation of their students on campus. The doxxing truck in Harvard Square and the relentless harassment of students online is outwardly unacceptable, and the administration has yet to explicitly condemn it.

I wish Harvard leadership had the courage to condemn the inflammatory statements made by Yoav Gallant, the Israeli Defense Minister, who publicly stated, "We are imposing a complete siege on Gaza—there will be no electricity, no food, no water, no fuel, everything will be closed. We are fighting against human animals, and we are acting accordingly." This is a declaration of collective punishment—another war crime under the statutes of the UN.

I wish that Harvard leadership had the courage to stand up for innocent Palestinian citizens and denounce Israeli Prime Minister Benjamin Netanyahu's proclamation, "We will turn Gaza into a deserted island …We will target each and every corner of the strip," which promises the brutal genocide of Gazan residents, about half of whom are children.

I wish that Harvard leadership had the courage to condemn the Israeli blockade of Gaza that has violated the human rights of Gazan residents including freedom of movement, rights to family unification, and access to food, electricity, and water since 2007, so much so that United Nations reports question whether the area is even livable.

I wish that Harvard leadership had the courage to acknowledge the intentional and systematic persecution and demonisation of the Palestinian people by the Israeli government. In March 2019, Benjamin Netanyahu made it clear. "Israel is not a state of all its citizens. According to the basic nationality law we passed, Israel is the nation state of the Jewish people—and only it, " he said.

While Harvard has been explicit in acknowledging the horrors of the war generally, they continue to be silent about Palestinian suffering specifically. Unfortunately, this double standard against Palestinian victims is not new or unique to President Gay's administration, but rather a continuation of past presidents' behavior.

During his time as President of the University, Lawrence Bacow never spoke about the violence that Palestinians suffered either. Despite extreme violence against Palestinians making international headlines multiple times, like during The Great March of Return and the 2021 Israel-Palestine Crisis, former President Bacow never made a statement condemning the violence perpetrated against Palestinians. This silence isolates students on campus, who must go through emotional grieving periods with no support from the University, and is especially striking since Bacow responded to other world crises like the invasion of Ukraine but never the Israel-Palestine conflict.

There is a clear disparity in concern and compassion extended to Ukrainian and Israeli victims of violence compared to Palestinian victims from the University. Harvard also remains conspicuously silent on other issues concerning the Middle East like the Moroccan earthquake, the Libyan and Syrian flooding crisis, or the earthquakes in Afghanistan. Despite a substantial Muslim and Middle Eastern presence on campus, Harvard ignores issues that regions of the Middle East face or those that predominantly impact Muslim populations. The silence on issues that affect the Middle East, in conjunction with Harvard's silence when its own students are doxxed and terrorized on our own campus, perpetuate a certain prejudice in Harvard leadership. If Harvard is going to condemn violence against one group of people, it should condemn violence all groups, regardless of race or religion.

Real courage is more than hypothetical. Real courage is an unequivocal commitment to supporting what is right and denouncing what is wrong. Real courage is the willingness to stand up, even if that means standing alone. I am not at all convinced that Harvard's leadership has this type of courage. So now, as President Gay encouraged in her inaugural speech, I'm asking why? Why does Harvard pretend to stand for justice everywhere when this attitude does not seem to extend to Palestinians? Why does Harvard pretend to be progressive, but when the time comes, it is fiercely protective of the status-quo? Why does Harvard refuse to use its global status to influence positive change in Palestine?

TOMISIN SOBANDE '26 (TOMISINSOBANDE@COLLEGE. HARVARD.EDU) WRITES FORUM FOR THE *INDEPENDENT*

"NOT ONE STATEMENT RELEASED BY HARVARD CONDEMNS, OR EVEN ACKNOWLEDGES PALESTINIAN SUFFERING."

FRIEND OR FOE?

How Tiny Machine Learning can change our lives for the better.
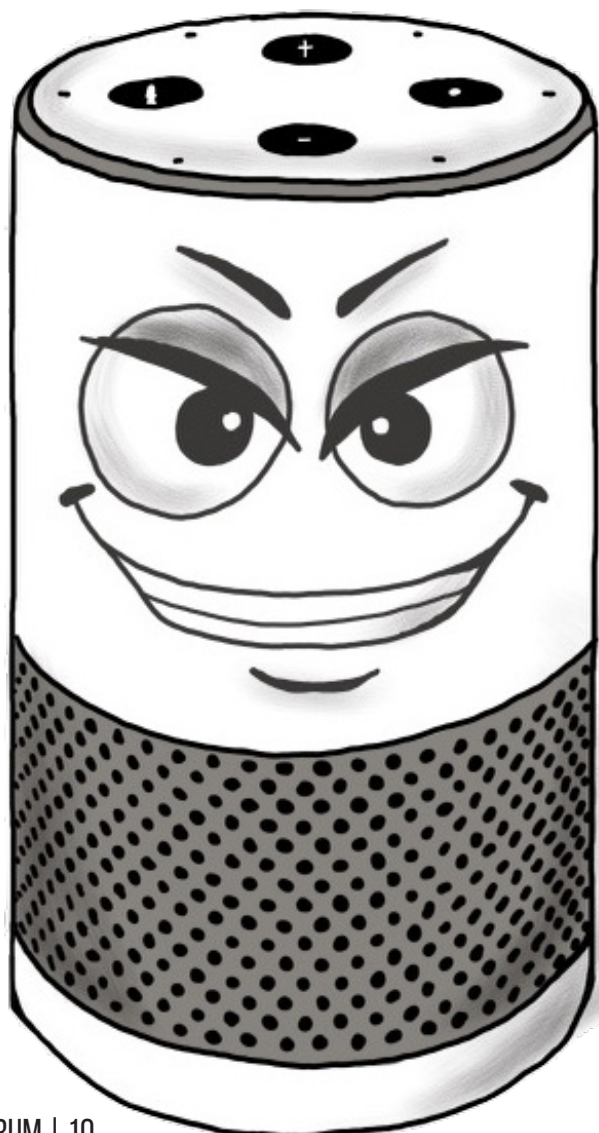
BY KAIA PATTERSON '27

In no world would I have ever expected to call myself a tech fanatic. Over the past few years, I've cloistered myself in an anti-tech bubble, consumed by the fear of a dystopia with emotionless robots taking over humankind. Through some investigation, however, I did the one thing I had convinced myself not to do: I changed my mind, and began to support the endeavors of one specific AI enterprise: TinyML.

Despite my stubborn protest, the presence of artificial intelligence is only growing. Around me, friends and family are adapting to a world of dependence on software and machine learning, a branch of AI utilizing data to draw from patterns and inferences with increasingly powerful and humanistic capabilities, all within smaller and smaller devices. According to ABI Research, Tiny Machine Learning devices, requiring significantly less power than traditional machine learning models, are expected to grow from 15.2 million shipments in 2020 to 2.5 billion in 2030.

No matter how much one attempts to avoid AI, its wave of influence will surely affect each and every one of us. If we hope to leave a positive impact on our world, we must understand the applications of these new technologies.

TinyML, a subfield of machine learning and artificial intelligence, holds great promise in advancing our society. While this new field must be approached with caution, we should welcome its ability to increase privacy, reduce energy consumption, and advance our scientific and technological capabil-

ities.

To learn more about TinyML and its applications, I spoke with Dr. Matthew Stewart, a postdoctoral researcher working with Professor Vijay Janapa Reddi, Associate Professor in the John A. Paulson School of Engineering and Applied Sciences and leader of research within the TinyML field.

"We generally define Tiny Machine Learning as a device that runs on about one milliwatt, so it's very, very resource constrained," said Stewart. "It has maybe one megabyte of flash memory, a very small amount of RAM, and it's running on really low power."

Despite being grouped with "edge computing," any gadget in which client data is processed as close to the source as possible, TinyML is a smaller and "super edge device…like a thermometer…running on very, very low power," Steward claimed.

With the use of TinyML, devices such as Amazon Alexa and Google Nest Audio can recognize trends from historical data. Overtime, the devices thus get "smarter," predicting future outcomes with increased accuracy as they accrue input data.

Yet, as the use of artificial intelligence enters the realm of natural language processing, research points to concerns surrounding devices' abilities to listen and collect unconsented audio transcriptions and forward said data to advertisement-seeking companies. Interviewed by consumer technology website Lifewire, Erik Haig from Harbor Research, a strategy consultant and developing firm, believes that "devices like [the Amazon Echo] and their counterparts … are not only always in your home, constantly listening to everything you say or do, but they—through years of data collection from their users—have perfected natural language processing."

Through a simple solution, however, Stewart showcased how users can benefit from TinyML without compromising their privacy. Rather than transferring data to the cloud, TinyML keeps our data within our devices.

Currently, Stewart and Reddi are hoping to utilize TinyML to further address privacy concerns. "We came up with this idea of … building sensors, which basically protects user privacy by doing the processing of the raw data on the device," said Stewart. In other words, since all of these models run locally, no data can be sent or stored within servers.

I asked Stewart if the benefits of TinyML really outweigh its drawbacks.

"I would say yes," he responded. "But with a caveat of, you know, you could say that about any technology, right? You can do

many terrible things with the internet. But you can also do very cool things with the internet that really help people's lives, save people's lives, enrich people's lives."

With an open mind, TinyML's wide range of applications holds a significant and beneficial impact on our day-to-day lives. Machine-related issues can be easily fixed through TinyML's detection functions. An Australian start-up adopted this strategy through their wind turbines, attaching TinyML to the turbine's exterior in an effort to detect malfunctions beforehand and notify authorities.

TinyML has gone so far as to take root in the agricultural sector. Through PlantMD, an app utilizing TensorFlow, Google's machine learning program, farmers can now take photos of sick plants and identify their ailments even without any internet connection.

TinyML reaches the medical world too. Devices like the Solar Scare Mosquito now curb the spread of mosquito-transmitted diseases like Dengue Fever and Malaria. At the third annual TinyML EMEA Innovation Forum, TinyML was shown to improve the monitoring of vital signs such as respiratory rate, heart rate, and blood pressure through the embedding of TinyML into wearable devices.

TinyML also advances a more sustainable world. "The main application for [TinyML] is... I can monitor the emissions of forests, or I can monitor pollution in cities, or I can monitor traffic better," explained Stewart. "You put sensors in buildings, and you could use it to … improve the sustainability of that building. That's a very basic thing that could make a huge difference."

In our local community, the positive impacts of TinyML are already being recognized. Just this past year, Harvard aided the funding of Mather as a Living Lab, a Mather House project aimed at utilizing miniature TinyML sensors to measure the use of energy, waste, and consumption throughout the seasons.

Should we view this new technology as a friend or a foe? For some, a new age of artificial intelligence and machine learning seems daunting—apocalyptic, perhaps. Beginning my research with these assumptions, I was, at first, intent on not only proving Stewart wrong, but also justifying the dangers brought on by machine learning, adamant to embrace the inevitable wave of artificial intelligence. Yet, I had failed to look at the bigger picture and see what Stewart and many others identified: the power to change lives.

KAIA PATTERSON '27 (KPATTERSON@COLLEGE.HARVARD.EDU) HAS YET TO LEARN HOW TO USE A SMART WATCH.

GRAPHIC BY ALMA RUSSELL '26

A NEW KIND OF KENDOM

THE ROMAN EMPIRE TIKTOK TREND EXPOSES GENDER'S IMPACT ON THE CONSTRUCTION OF HISTORY.

BY RANIA JONES ' 27

It all began with one question: *"How often do you think about the Roman Empire?"* While sitting with friends in Cabot, I decided to text my father and brother this trivial question about the Roman Empire. They respond, detailing that the Roman Empire crosses their mind "every day" and "all the time." I didn't believe them.

The recent TikTok trend hinges on this simple question, with women asking their male friends, family members, coworkers, or partners how frequently they ruminate on Rome. Typically, the recorded responses range from impassioned opinions about specific emperors, to appeals about the "lessons" to be learned from the Empire's rise and fall, to utter confusion. For the most part, these videos show many men (often cisgender and white) admitting it actually crosses their minds almost daily. Weird, no?

Women, in response, have started asking what a corresponding "Roman Empire" would be for females Responses have varied, but they primarily consisted of the Titanic, the Triangle Shirtwaist Factory Fire, the Romanovs, and Greek mythology. The gendered consideration of history allows this TikTok trend to harbor misogynistic ideals. Women "claiming" historical moments like the Titanic or the Triangle Shirtwaist Factory Fire could be seen as women being pushed to think about and study more "feminine" events, not because they were exclusively about women, but because they both concern gender-related and social issues like women's suffrage, the relationship between women and children, and the role of women in the workforce.

In an interview with the *Harvard Independent*, History Professor Jane Kamensky spoke on how the teaching of history is often gendered. "Where you would see real gendered patterns in the teaching of history is looking in history textbooks … The materials of the history of women are overlooked." She offered considerations about how to consider history without out

gendered constraints. "There are a number of ways out of that, one is to do less [memorization of] dates … or carry out more case studies, [and teach] historical skills and dispositions and capacities for analysis."

The all-too-common stereotype of Rome as the basis of "Western" civilization often relies on outdated conceptions of the ancient world. In addition to the common association of Roman costumes to masculinity, the Roman Empire has been historically and falsely memorialized in textbooks and museums as a great "white" force, even though its population was much more racially diverse.

There is also the possible implication that this trend strengthens harmful and white supremacist perceptions of the Roman Empire. This narrative of Rome as an all-white, all-male society is highly mythological and perpetuated by problematic media outlets, such as social media, film (*Gladiator, Ben-Hur, Spartacus*), books (*I, Claudius, The First Man in Rome*) and TV (*Rome, Plebs*), that portray ancient Rome as a haven for muscled white-men adorned in linen robes, iron armor, and scrappy sandals. When these false ideals are reinforced, our perception of the Roman Empire aligns us with the most patriarchal and traditional forms of power.

The popularity of this trend on TikTok reveals the prevalence and relevance of the "great man"

narrative that contemporary researchers, historians, and scholars have worked so hard to challenge. Still, Professor Kamensky suggests that crazes like the TikTok Roman Empire trend might actually provoke important conversations. "Trends like these might be pointing out something that makes people go, *'Hmmm, why is that?'* Maybe you didn't have these questions about why something is the case until this trend surfaced?"

Despite having approximately the same numbers of men and women, the Roman Empire was built on the oppression of women and the leadership of militaristic and patriarchal power structures. When we romanticize these histories, we lose the opportunity to seriously consider how marginalized groups navigated

these circumstances.

Beyond the Roman Empire, the gendering of subjects affects many other aspects of our society today. Researchers at the global education organization IREX have found that men and boys devalue spaces and activities they associate with feminine gender roles, leading to a loss of economic and educational opportunities for themselves. For example, men leaving traditional secondary school and choosing vocational based schools as more women have gained access to education has "feminized" the traditional classroom.

Constructing more inclusive histories also allows these portrayals to be more accurate. "A truer history is a more complete history, and a more complete history includes all the people who are enforcing status quo and making change," shared Professor Kamensky.

Although men might think about the Roman Empire frequently, they might not intentionally support these extremist ideals. However, media that consistently genders historical events plays an immense role in keeping the patriarchy alive.

In an interview with Harper's Bazaar, Harvard Professor of Classics and Ancient and Modern History Emma Dench discussed historical perspectives and the danger of narrow views. "Very few people nowadays come to the Roman Empire through wider education and reading, which would offer a whole range of different perspectives on it," she said. Instead, they think of these "particular associations with power and violence," offering a much narrower perspective of the empire itself.
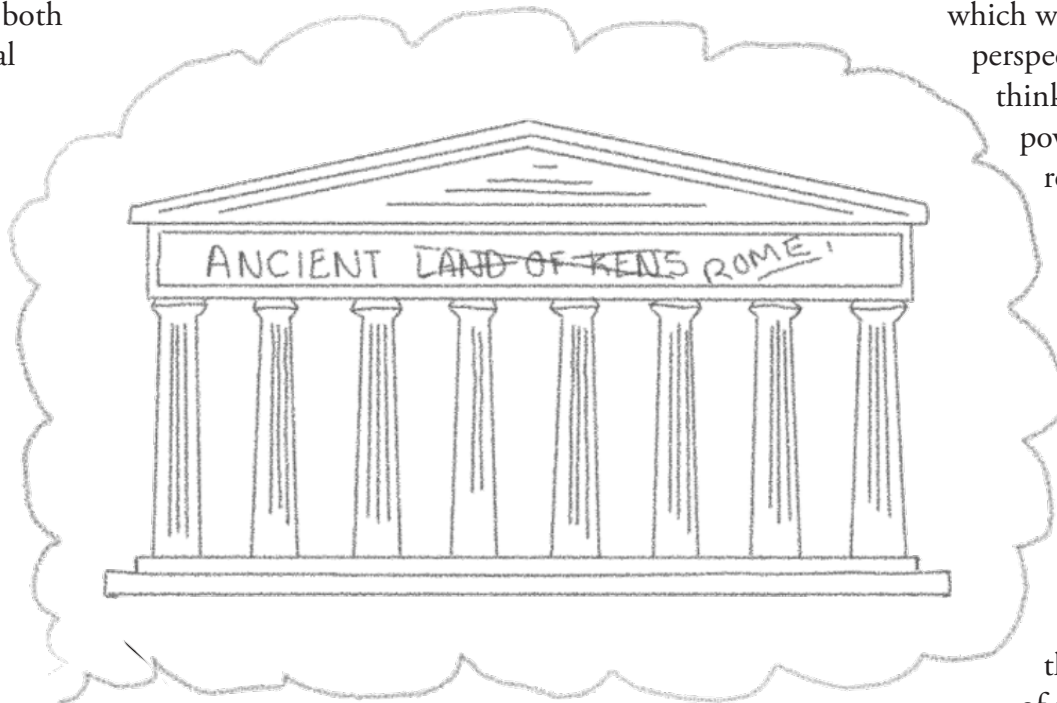
The Roman Empire TikTok trend may also point to anxieties around manhood and masculinity in our contemporary society. This big "empire" mentality has carried over into so much of the media men consume today. The TikTok trend highlights how deep-seated misogyny shapes our understanding of history, illustrating what popular images of the past can do for us. The popularity of the trend is a testament to the power of the classical tradition in its ability to shape contemporary western culture, bridging the gap between education and pop culture.

This trend *could* be harmless, except for what it suggests about the way that history is passed down and constructed. Instead, it demonstrates how mainstream perceptions of the Roman Empire rely on an interpretation of history that is actively harmful. On a greater scale, this TikTok trend should teach us that the way that historical legacies are written and rewritten is important. It is these interpretations that define past realities and shape our understanding of the future.

RANIA JONES '27 (RJONES@COLLEGE.HARVARD.EDU) SEEKS PERMISSION TO THINK ABOUT THE ROMAN EMPIRE.

GRAPHIC BY ISABEL EDDY '24

10,000,000 PRAYERS FOR PEACE

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WHEN THE **END** ARRIVES ITS REALLY THE BEGINNING

THE WORLD IS WATCHING

BY WILL GOLDSMITH '24

To the Harvard Palestinian Solidarity Committee and the Harvard community at large,

I write today not as a particularly religious person. I rarely attend religious services. I had a Bar Mitzvah, but I have profound doubts about the existence of a God. Although I have no doubt that my religious background subconsciously shapes my perceptions of the world, it does not animate my thinking surrounding the recent outbreak of violence in the Middle East. We are dealing with human issues, not religious ones.

I write today as a fellow student, as a fellow human. I write today to implore my fellow Harvard students—and members of the Palestinian Solidarity Committee specifically—to come together and choose comprehensive dialogue instead of inflammatory rhetoric. The Harvard community still has the opportunity to engage in constructive dialogue that affirms the humanity of both Palestinians and Israelis and that acknowledges the right of the Israeli state to responsibly defend itself against a monstrous tyranny.

I recognize the pain of all members of the Harvard community affected by the recent explosion of violence in southern Israel and Gaza. Many students, faculty, and community members have family members and friends killed in the recent terror attacks in Israel. Some have loved ones who have perished as a result of retaliatory Israeli airstrikes. But recognizing pain is different from truly understanding it. While I recognize the pain of my classmates, I cannot truly grapple with its suffocating weight. I have no family members who have died in the recent wave of violence in the Middle East. I do, however, have a heart. And it's slowly rupturing both because of the violence in the Middle East and the subsequent division that this violence has stoked on our campus.

The Harvard Palestinian Solidarity Committee (PSC) held a rally on Saturday, October 14th to "Stop The Genocide" in Gaza. The Harvard Crimson reported over 1,000 individuals in attendance. Every rally attendee did not explicitly classify as a PSC member. Although I recognize the PSC's legitimate distress over the historical and mounting loss of life in Gaza, I'm disillusioned by the rally's inflammatory characterization of ongoing events in the Gaza Strip.

Invoking the term "genocide" regarding the historic and contemporary plight of the Gazan people in the wake of barbaric terror attacks mischaracterizes the nature of Israel's response to the October 7th Hamas attacks, implicitly suggesting the illegitimacy—and, more problematically, immorality—of Israel's attempts to defend itself. According to the United Nations, for an action to "constitute genocide, there must be a proven intent on the part of perpetrators to physically destroy a national, ethnical, racial

or religious group. Cultural destruction does not suffice, nor does an intention to simply disperse a group."

Israel has ordered Palestinians residing in the northern part of Gaza to migrate southward in advance of what is widely anticipated as an Israeli ground operation in the Gaza Strip. And the UN's Secretary General has rightly pointed out the grave humanitarian consequences posed by the movement of around 1 million Gazans. While Israel's critics may be inclined to contend that the Israeli evacuation order reflects an attempt to "disperse" Palestinians, the UN's definition of genocide clearly states that dispersal alone is not sufficient to regard an action as genocidal. Although technicalities should in no way dictate how the public assesses the conduct of Israel, we must be wary about inaccurately labeling Israel's self-defense as genocidal.

I recognize that PSC members believe in the shared humanity of all peoples irrespective of their ethnic identity or religion. And I also share President Biden's position urging against the Israeli occupation of Gaza. Indeed, I am of the firm belief that Israel has an obligation to plan for a post-Hamas future of prosperity for Palestinians in Gaza. My hope is for Harvard students to unite as a community to say in a loud and explicit voice that innocent Gazans, just like their Israeli brethren, deserve to live freely and with dignity. Dismantling Hamas' military capabilities is key to that freedom and dignity-promoting effort.

I noted how the PSC placed several demands on Harvard at the rally, one of which is an apparent need for "Harvard to call on Senator Elizabeth Warren and Senator Ed Markey to call for a ceasefire" in Gaza. I'm left wondering, though: Why should Harvard ask senators "to call for a ceasefire" as Israel mounts military operations to rid the Gazan people of the tyranny of Hamas? Shouldn't a "ceasefire" only occur after the defeat of Hamas? Isn't it a moral imperative for all Harvard students to support the dismantling of a terrorist organization that subjugates its own people and commits acts of depravity against innocents in a neighboring country?

Israel must do its utmost to abide by the rules of war and to protect as many civilians as possible as it fights against Hamas. The lives of Gazans are just as worthy as the lives of Israelis. But calling for a "ceasefire" in Gaza disregards the lives of Israelis by allowing for terrorist organizations like Hamas to kill their children without consequences. I recognize that calling for a ceasefire in Gaza may reflect the PSC's genuine love of peace, yet terror cannot be appeased. Such appeasement would rob the Israeli people and peace-loving Palestinians of justice.

Some members of the Harvard community and the PSC in particular have sought to contextualize the recent terror attacks in

Israel. The road to peace between Israelis and Palestinians has indeed been fraught and elusive with heartbreaking missteps on both sides. I condemn the forces of illiberalism that have penetrated the Jewish state in recent years. Just like the Palestinian people, the Jewish people have a context of their own, though. Hate toward Jewish people is not new. And although much has been made of the fact that October 7th was the gravest day for Jewish people since the Holocaust, less has been said about that horror, the war that ended it, and its resonance for Jews and non-Jews alike.

In a speech in the House of Commons during the dark, early days of the British people's fight against the perpetrators of the Holocaust, Winston Churchill forcefully informed his countrymen and women of the British government's resolve: "You ask, What is our aim? I can answer with one word: Victory—victory at all costs, victory in spite of all terror, victory however long and hard the road may be; for without victory there is no survival."

I write today to ask my classmates in the PSC and the Harvard community at large to consider what an absence of "victory"—a submission to Hamas—would mean for the wellbeing of millions of innocent civilians in the state of Israel, for the millions of Palestinians who desire a prosperous future, and for peace-loving people around the world. How can anyone be assured of their protection from senseless violence when sovereign governments cannot launch military operations against agents of terror? Won't failing to provide justice to the victims of terror attacks embolden the forces of terrorism and tyranny globally?

Fighting for "survival" is the context of the Jewish people. It is not a new fight. The fight to defeat Hamas ought to be waged in a just fashion that adheres to international law and shows respect for the lives of innocent civilians—yet it still must be fought until Hamas no longer represents a threat to Palestinians and Israelis alike.

History does not provide neat and tidy lessons. It does suggest, however, that appeasing hate has profound consequences.

Whether we reside in Cambridge, Jerusalem, Kiev, or Taipei, the fight against tyranny and injustice is our own. The world is watching. We can do better, together.

Sincerely,

William Goldsmith

WILLIAM GOLDSMITH '24 (WILLGOLDSMITH@ COLLEGE.HARVARD.EDU) WRITES FORUM FOR THE *INDEPENDENT*.

PATIENT X

A PERSONAL ACCOUNT OF THE HIDDEN EATING DISORDER CLINIC IN HARVARD SQUARE.

BY ANONYMOUS

Trigger Warning: Mentions of eating disorders and descriptions of treatment.

When I was first admitted to the residential unit, fourteen years old and newly diagnosed with severe anorexia nervosa, I immediately became cognizant of how trapped I truly was. It was often weeks between breaths of fresh air. *O-u-t-s-i-d-e.* I am cursed by those seven letters. The air in the unit was nothing short of stale: a dull mix of sanitizer, unwashed pajamas, and teenage girls who weren't always allowed a shower. Thankfully, the building's architect allotted for large windows looking out on Bow Street from the medical and group therapy rooms. No matter what was happening within the confines of CEDC, Harvard Square carried on.

You've walked past it a thousand times. Passing by Berryline, walking home from class, or headed to the 5 o'clock mass at St. Paul's, students and Cambridge residents alike leisurely walk by the windows of 3 Bow Street, only it never registers as

anything more than another building. You would never guess that there are thirty women watching the outside world from their windows, working through the hardest stages of recovery on the inside.

The Cambridge Eating Disorder Center (CEDC), nestled in the tiny downhill section of Bow Street, is an eating disorder clinic for girls and women with both residential and outpatient programs. The third floor, home to thirteen adolescent girls at a time, became my home during the winter of my freshman year of high school. While living there, going outside for the day's outing was not an option unless you were fully compliant with the program for forty-eight consecutive hours.

Nothing screams abnormal like living in a residential facility, but the Square gave me a taste of everyday life. In the mornings, I watched as drops of sun poured over Lamont, warming my body through the little blue hospital gown. During group therapy, I leaned over the couch and made faces at the pigeons nesting in the planters outside. I watched pillowy snowflakes flutter while a pulsing blood pressure cuff squeezed my bicep, yearning for a snowflake to fall on the tip of my tongue. When I couldn't bear to watch the phlebotomist coaxing vials of blood from my forearm veins, I tilted my head towards the sun, trying to make out shapes in the clouds.

All of this seems trivial. But at the time, I needed something to push me forward. I'd like to think I don't back down from a challenge, but an eating disorder is like a parasite, and a human is its hapless host. Between the toll on your organs, hormones, and weight, and the immense mental struggle, it's easy to get stuck under the iron rule of anorexia. And after awhile, I just couldn't listen to the staff play one more TED talk about life being too short to count your cornflakes.

The people I found most inspiring were the college students I obsessively observed. For nearly three months, I examined Harvard's undergraduates walking to class, sipping Tatte lattes, heading out on Saturday nights. Harvard students were

more holistic than I imagined. It wasn't uncommon for me to see the same students day by day, sporting a heavy backpack at noon and cocktail or clubbing outfit several hours later. I'm not saying that you can't be all of those things at other schools. Just that my perception of college was a place where people chose what kind of student they wanted to be - studious, outgoing, artsy, or social, and Harvard gave me the idea that I could be *everything* I wanted, all at once. In my mind, my existence post-recovery would go back to as it was before. I hadn't considered that the future might hold something fresh and exciting. The students I surveyed quickly became a vessel for the rich, well-rounded life I imagined leading.

I never thought that my road to recovery would start at the hands of a sprinkle shortbread cookie. But it did. To this day, I am confused as to why the program thought it would be a good idea to force the patients to bake on a weekly basis. Cookies, brownies, even tempeh one day. During one particularly difficult session, frozen oranges were thrown and tears were shed over a stick of butter. We lost it. I distinctly remember thinking of the zillion times I saw students scarfing down ice creams, pastries, cookies, bagels on their way to class. How could I be everything I wanted, just like them, and lose it over a dessert? That night, I ate two sprinkle shortbread cookies for the evening snack, and so began the beginning of my commitment to recovery.

Over the course of the next nine months, I was exposed to a wide variety of treatments following a deep relapse and, eventually, a diagnosis of refeeding syndrome: inpatient treatment with nasogastric intubation, a psychiatric ward, outpatient therapies, and family-based treatment. But most impactful was the winter I spent on Bow Street. I would not be a student here today without the ones who came before me, who, without knowing it, facilitated much of my recovery.

Harvard is where I learned to live again, and Harvard is where I will continue to grow. As you go about your days, hopefully some of them on Bow Street, I hope you think of the girls in CEDC. I promise they are watching, and I promise you mean something to them.

This author requests that you do not draw attention to or try to enter the Cambridge Eating Disorder Center. Let the patients heal in peace and privacy, knowing that you may impact and inspire them just by living your life.

JUST THAT MY PERCEPTION OF COLLEGE WAS A PLACE WHERE PEOPLE CHOSE WHAT KIND OF STUDENT THEY WANTED TO BE - STUDIOUS, OUTGOING, ARTSY, OR SOCIAL, AND HARVARD GAVE ME THE IDEA THAT I COULD BE EVERYTHING I WANTED, ALL AT ONCE.

POINT/COUNTERPOINT: SHOULD HARVARD KEEP THE LANGUAGE REQUIREMENT?

BY LUKE WAGNER '26 AND JONAH KARAFIOL '26

Luke: The language requirement is essential to Harvard. In today's increasingly interconnected world, the importance of effective communication across linguistic and cultural boundaries cannot be overstated. As the global landscape continues to evolve, the ability to understand, speak, and interact in multiple languages is a powerful asset. By requiring students to take a language, Harvard is steering the future leaders of the world in the right direction.

Jonah: Harvard should remove the language requirement immediately. Students are forced to spend two of their limited course slots on a language that they will probably forget. The argument that students will gain competency in a culture through studying its language isn't strong—students can develop expanded cultural competency through other offerings, such as History, Ethnicity, Migration, and Rights, Romance Language and Literatures, or General Education courses. Instead of leaving students with lasting language fluency, the language requirement bars students from dedicating their Harvard experience to taking courses they are interested in.

Luke: The language requirement is essential to Harvard students' understanding of the world around them. I am the only non-international student in my blocking group, and my blockmates constantly complain about American students' lack of knowledge about their home countries. Having only 15.4% international students in the 2027 class, Harvard is responsible for combating the stereotype that American high schools pay an overwhelming amount of attention to American and English studies, with the two most popular high school AP classes being AP English Language and AP US History. While it's certainly important for American students to learn the history of our country, it is also important to feel comfortable and informed in discussions of global issues.

Jonah: If culture and communication are the primary concerns, students can easily immerse themselves in other classes that do so, such as the Global Japanese Cinema General Education course. This would still allow students to learn about other cultures, but in a way that does not confine them to a two-semester class that meets four times a week. Students who really want to learn a language or explore other cultures will do so regardless of a requirement; students who find little value in it will likely fulfill the requirement by taking the easiest language course possible. Many language courses on campus such as Zulu, West African Pidgin or Sign Language that are known for having very minimal work often fill up with students who want to avoid a serious time commitment. Not only do they get little out of their language requirements, but they can also harm the experience of students who truly care about learning the language.

Luke: What I believe is more important than learning the language is the exposure you can get to other cultures. A possible alternative to a language requirement could be specific classes on other cultures. I'm currently enrolled in Chinese 120A, a course that has allowed me to understand Chinese culture by learning the nuances of daily Chinese conversation. Chinese 120A gives me more than the ability to talk to someone in another language—it makes me solve problems differently. While I think taking a language class is extremely important, a class centered around culture could be a suitable alternative.

Jonah: If communicating ideas precisely is the goal of the language requirement, students should be able to do so with English courses that enhance their ability to communicate. For instance, English workshops help students become stronger writers, helping them to express their ideas just as learning another language would. Moreover, this mastery of a foreign language is unlikely to occur in one or two semesters of courses. I would support Harvard altering the language requirement to one that could be satisfied with different courses on other cultures. This would provide the benefit of exposing students to other cultures without forcing students to take courses they have little to no interest in and allow them to focus on topics that intrigue them.

LUKE WAGNER '26 (LUKEWAGNER@COLLEGE.HARVARD.EDU) ENCOURAGES EVERYONE TO GET A LANGUAGE CITATION AT HARVARD.

JONAH KARAFIOL '26 (JONAHKARAFIOL@COLLEGE.HARVARD. EDU) STILL HAS NOT FULFILLED HIS LANGUAGE REQUIREMENT.

GRAPHIC BY DAVID LI '25
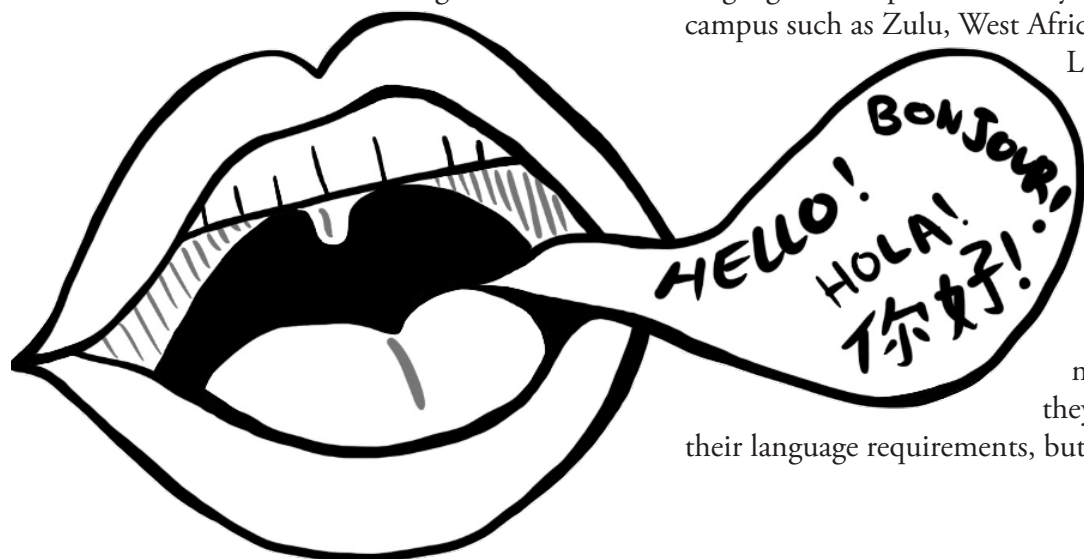
Hello reader!

My name is Jordan Wasserberger. I'm the creator and host of Excelsior, a pop culture comedy podcast now published by The Harvard Independent! We're so excited to be a part of the Indy family, and can't wait to bring you all into our particular brand of insanity. We mainly cover movies, tv shows, video games, etc, and whether you're a hardcore enthusiast like us or just a casual fan, I promise we have something for you. You can find us on Spotify, Apple Podcasts, Amazon Music, and YouTube - make sure to tune in every other week when our new episodes come out. Please follow us @excelsiorpod on Instagram, we always love hearing your thoughts on whatever we're covering that week, or if you just want to let us know how horribly wrong we are that works too. Scan the QR code to go to our Linktree, and listen to our newest episode, where we give you some of our favorite dystopian projects. Until next time!

EXCELSIOR X INDEPENDENT

THE SKY'S THE LIMIT WITH NICHE CONCENTRATIONS

A glimpse into the future of Harvard's lesser known concentrations.

BY AVA REM '27

❝ What are you concentrating in?"

Ah, yes, the unavoidable question that somehow makes its way into every conversation you have with peers, faculty, and even overbearing parents back home who question your career choices. More often than not, the most common responses you will hear to this question are Applied Mathematics, Computer Science, and Economics—three concentrations which, according to the Harvard College Field of Concentrations Handbook, were chosen by 7%, 9%, and 14% of eligible concentrators during the 2022-2023 academic year, respectively.

Rarely do you meet someone who is concentrating in Astrophysics, Romance Languages and Literatures (RLL), Folklore and Mythology, or South Asian Studies (SAS). With only 16, 6, 5, and 0 concentrators for the 2022-2023 academic year, respectively, these smaller concentrations are, as astrophysics and physics joint concentrator Arielle Frommer '25 puts it, very "niche." However, after speaking with concentrators and faculty in these smaller fields, it's clear that niche concentrations provide students with an invaluable sense of community and more personalized access to a plethora of resources—unique benefits which students in these fields turn to even if they choose to jointly concentrate with a bigger concentration.

Frommer explained the appeal of smaller concentrations like astrophysics. She said, "the classes are all pretty small and personalized, and because there really aren't that many concentrators, you kind of get your pick of research which is really great."

On top of being able to get to know her fellow 15 concentrators really well in a smaller class setting and take advantage of the resources at Harvard's Center for Astrophysics, Frommer explains, "the department has so much money they don't need because it's so small." This has afforded her the unique opportunity to attend conferences in Seattle and New Orleans, and later this year, go on a class trip to Chile.

This emphasis on a tight-knit community that has more resources at their disposal characterizes other smaller concentrations as well. Folklore and Mythology Department Administrator Holly Hutchison said, "Being so small, we do have a lot of community here. We can do events where almost everybody can show up if they want to and we try to foster that," such as the department's upcoming field trip to Salem before Halloween.

Founded in 1967, Harvard's Folklore and Mythology department was the first undergraduate program in folklore and mythology in the United States. With this trailblazing history in mind and the department's emphasis on interdisciplinarity, Hutchison noted her optimism about the department's future. She

said, "We have a number of joint [concentrators], and we have some people who are right now exploring the double major, so that's gonna be interesting to see how that kind of pans out. It's really new for all of us."

As studies continuously detail the nationwide decline in the number of students majoring in liberal arts fields, the danger of the survival of liberal arts concentrations that focus on language and literature begins to emerge. However, like Hutchison, the Chair of the Department of South Asian Studies Parimal G. Patil believes that the future of small concentrations lies in our commitment to interdisciplinarity and finding the right students for certain concentrations.

"We know that South Asia isn't going anywhere," says Patil. "The faculty that are on the masthead [of the SAS department] teach courses with South Asian content spread out throughout the university in music, philosophy, etc."

By broadening the reach of certain lesser known subjects, smaller concentrations on campus can continue generating natural interest in the student body. Patil says, "The idea is not to force anyone, right? The idea is to expose people to how small concentrations and particularly concentrations they may never have thought of doing, like South Asian Studies, might be a good path for them."

Surprisingly, it appears that making space to highlight the benefits of Harvard's

smaller concentrations has already begun to bolster student and faculty willingness and open mindedness to explore new pathways. In particular, after students' long fight to find a home for Southeast Asian studies, Harvard announced that it would hire a preceptor to teach Tagalog starting this academic year.

This historic decision echoes the sentiment that Romance Languages and Literatures concentrator Sadie Kargman '26 expressed when she said, "[RLL] is one of the very few departments where you have people that are studying different concentrations, but then they all come together for this one class because they have a joint passion, for say French or Italian."

As long as smaller concentrations continue to bring people of all backgrounds and departments together to make the existing classes at Harvard more representative of the world around us, as well as create new classes and departments that address the needs and interests of the student body, it's safe to say that they are not going away any time soon.

AVA REM '27 (AVAREM@COLLEGE.HARVARD.EDU) PLANS ON SENDING THIS ARTICLE TO HER FATHER TO PROVE TO HIM THAT PURSUING A SMALLER CONCENTRATION CAN BE A GOOD THING.

CHRISTIE BECKLEY '26

POINT: WHY AI SHOULD BE USED IN THE CLASSROOM

BY EVAN ODEGARD PEREIRA '26

The rise of generative artificial intelligence (AI) has been one of the fastest developments in academics over the past year. Most students discovered Chat GPT and other AI tools less than a year ago, but today these tools seem omnipresent. With all of the changing rules and guidelines set forth by the University, plus a wide spectrum of differing class policies outlined in constantly revised syllabi, generative AI is a touchy subject on campus. Students today are left without a clear notion of how to use this new technology in an acceptable way, yet as long as students are encouraged to keep these factors in mind, they should continue to utilize these tools in the classroom.

Despite the negative disciplinary policies associated with generative AI, it holds immense promise for the future of education. From coding to prose, artificial intelligence makes tasks less complicated, helps students learn faster, and provides tools to make work more efficient. There are, of course, limitations and concerns around copyright infringement and academic integrity when using generative AI, and any classroom use should be approached with caution.

Generative AI has been used to deepen my course instruction in creative ways. A few weeks ago, my Arabic teacher used an entire lesson to experiment with Google Bard's translation skills and understanding of the Arabic language. Our findings taught me about Arabic in a new and unexpected context; I observed which aspects of the language are easier for a learning model to pick up and which ones are less obvious. For example, Bard was able to write well in Modern Standard Arabic, but made more mistakes when asked to write in dialects like Egyptian and Levantine. This reflects the linguistic reality of media in the Arab World, as most news and formal documents are in Standard Arabic. Because an AI learning model is fed with large data sets from the internet, it picks up the standard dialect even though it is not spoken by people in daily life.

This use of generative AI in the classroom confirmed how intellectually fascinating it is at its core. When implemented correctly, AI can encourage students to deepen the level of nuance in their understanding of course material. Of course AI is interesting from the perspective of programming and automation given its origin in STEM fields, but it is valuable to the humanities as well. AI can be used to explore the disparities in available information about certain topics and in certain languages, reflecting historical and current power imbalances. Generative AI can also subtly reflect the biases that went into its design; studies have explored the ways in which AI can adopt and even amplify racial and gender stereotypes. These patterns are worthy of academic attention.

The use of generative AI as a teaching tool has not been nearly as controversial as its use by students outside class. Concerns over academic integrity have led many Harvard classes to ban the use of AI altogether. While these bans appear to be an immediate fix to the difficult question of where to draw the line with AI, regulating its use entirely is nearly impossible and a counterproductive use of resources.

However, while the use of ChatGPT or other similar platforms to cheat on problem sets and write essays should certainly not be allowed, not all use of AI is inherently academically dishonest. Generative AI can be useful, especially in the early stages of the writing process, for putting together outlines and sorting through sources. AI can also help find synonyms for overused words and phrases, or find ways to make sentences less wordy. As long as the ideas, arguments, and style expressed in the final product belong to the writer, some help can be attributed to AI in a way that does not detract from the originality or creativity of the author's work.

AI is also useful for reading and comprehension of difficult texts. AI tools can summarize texts that are too long to read in a manageable sitting, or simplify advanced texts to achieve a higher level of clarity. That being said, generative AI can sometimes produce inaccurate or insufficient summaries of texts, so students must keep these potential pitfalls in mind.

We are still in the early stages of AI research and development. While students should be curious about the ways in which AI can make work more efficient, they should not trust it to provide flawless help or rely on it very heavily. Students must not use AI as a method of cutting corners, but as a way of exploring how they can harness new technology. Working with AI should not necessarily be *easier* at this point in its development; experimenting with AI should come with its own set of tasks, such as questioning, editing, and double checking the suggestions made by AI tools.

In terms of academics and logistics, AI should be treated as the useful tool that it is, and AI skills should be encouraged and cultivated in Harvard's upcoming classes. Given that AI is one of the keystones of future technology, it is Harvard's responsibility to prepare its students to harness it effectively and accurately, ensuring they will be comfortable handling whatever technological development in our rapidly-developing world confronts them next.

EVAN ODEGARD PEREIRA '26 (EODEGARD@COLLEGE.HARVARD. EDU) ASSURES THE READER THAT GENERATIVE AI WAS NOT USED IN THE WRITING OR EDITING OF THIS ARTICLE.

GRAPHIC BY SEATTLE HICKEY '25

COUNTERPOINT: WHY AI SHOULD NOT BE USED IN THE CLASSROOM

BY JAI GLAZER '27

According to CNN, 30% of college students have used ChatGPT in the past year to supplement their learning. Evidently, artificial intelligence is increasingly becoming a prominent facet of everyday life, with its growing use in the classroom speaking volumes about how quickly we must adapt to it. While AI's expansion into the classroom could be seen as further advancing education, it is imperative to closely evaluate the implications of accepting AI as an educational tool. While AI might seem like the world's most efficient personal tutor on the surface, tools like ChatGPT impair learning when used incorrectly because of both the ease at which it can give students answers and its confident inaccuracies. Due to the many obstacles it places in the way of effective learning, students should not be able to use AI in the classroom.

While recognizing AI's potential as a positive force in the education space, Dean of Harvard's Graduate School of Education Martin West states in an article published by the GSE, "some uses of generative AI can undermine [students'] learning. Particularly, when the tools are used to do the cognitive work of thinking for students rather than to support their learning." A Harvard education should help students think for themselves and develop the life skills necessary to make decisions on their own in the real world, and AI can greatly hinder the growth of these skills.

When one uses ChatGPT in the classroom, it often simply spits out answers rather than helping them come to conclusions on their own. In essay classes, I can ask the chatbot to write a paper on specific concepts of Daoism and it will write the paper for me, clearly and effectively expressing key concepts to create an arguably sophisticated essay. Students can then pass off Chat GPT's work as their own, or at least draw heavy inspiration from its response. They can use Chat GPT to enhance or even supplant their own analytical thought, thus creating a facade for themselves or their teachers whereby they aren't actually learning the material—the AI has learned it for them.

According to a June 2023 article from *Nature*, "slowly and gradually, AI limits and replaces the human role in decision-making. Human mental capabilities like intuitive analysis, critical thinking, and creative problem-solving are getting out of decision-making." As ChatGPT expands on its capabilities (GPT 4, the AI's subscription-based newest update, now includes the ability to analyze photos), these issues will only be magnified. If students are given a tool that will do the work for them and spit out the answer, they are simply not going to learn as well as they would if they were required to independently problem solve.

Harvard, like every other academic institution on the planet, has been forced to wrestle with these issues over the past year, and the same pitfalls recognized by Dean West have cropped up in Harvard classrooms. One such example is CS50, which has recently incorporated the CS50 duck into their curriculum.

Yet even if we assume that AI can help students learn material rather than outright giving them answers, readily-available online AI tools are far from advanced enough to be accurate, posing significant drawbacks for in-school use, particularly in STEM fields, where the software has been known to struggle with basic math problems. For example, when I asked ChatGPT make a paragraph about AI inaccuracy, ChatGPT 3.5 spit out fake but believable statistics such as "AI systems currently make errors in up to 20% of their responses when handling complex or nuanced questions," and "68% of students who relied solely on AI-generated content for their assignments encountered errors," with believable fabricated sources to match. I then confirmed the inaccuracy of these statistics by comparing them to reputable statistics supported by real world data.

It's alarming to see how ChatGPT can produce believable but incorrect and misleading information. One might think that software updates would fix this issue, but even modern versions of AI, such as ChatGPT 4 have actually been shown to spread false information and narratives at a higher rate than its predecessors.

How can we trust a tool that can so easily mislead its users with the education of future generations? Until ChatGPT rids itself of this problem, students and teachers cannot expect it to output accurate information, putting clear roadblocks in the way of its ability to educate students effectively. Both in regard to the AI's general accuracy and the ease at which it provides access to information, Harvard should be wary of introducing AI into the classroom.

JAI GLAZER '27 (JGLAZER@COLLEGE.HARVARD.EDU) WRITES FORUM FOR THE *INDEPENDENT*.

GRAPHIC BY NATALIE MENDEZ '26
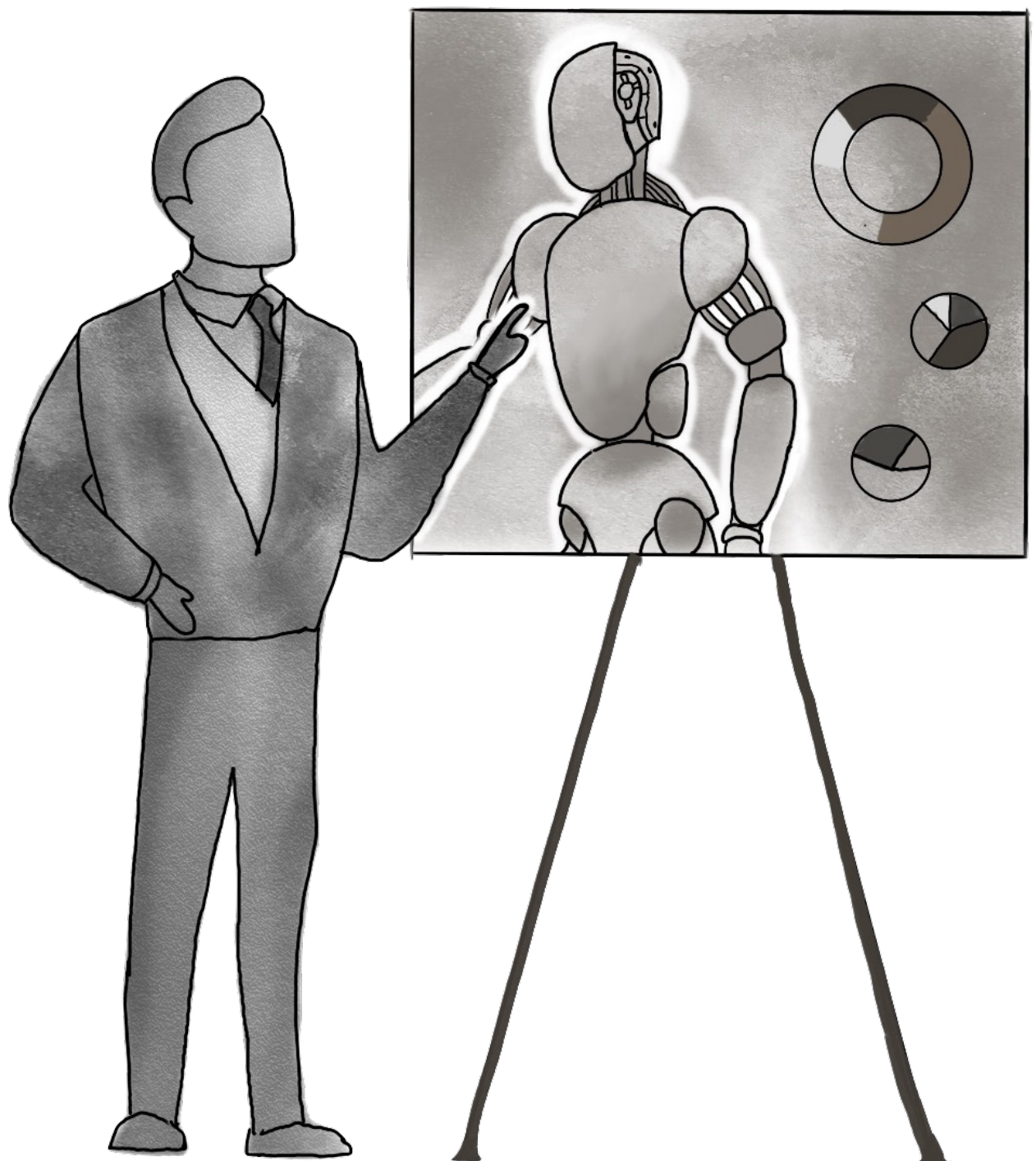
The Harvard Procedure

A creative writing piece on Harvard in 50 years.

by Ilana Feder '26

Even after 50 years, Harvard University has retained its top-ranked reputation. The year is 2073, but humans still make up the student body rather than robots. However, instead of Harvard student-athletes scootering to class, they now can teleport, pleasantly out of our way.

While many believed the downfall of humanity would be the rapid development of AI, many overlooked the continued development of the competitive environment on college campuses, particularly Harvard. The race to perfection has become so imperative that students will take any measure to stand out amongst the crowd. It's not just about being the smartest anymore. It's about trying to stay ahead, trying to beat out the growing competition in a world where information is so freely accessible. And technological advancement has finally made this possible, leading to the Harvard Procedure.

When the surgery was first offered by HUHS, many students and people across the world were extremely against it. The "procedure" contradicted everything it meant to be a human being, celebrating one another's strengths and weaknesses. However, no one was allowed to speak out about it here on campus. In fact, no one is allowed to speak out about anything anymore, or they will receive official public cancellation. Some things at Harvard never changed, including the roaches and the rats. Only these rodents are no longer rats. They've been replaced by cameras and audio recorders waiting to catch the next victim who slips up and says something cancel-worthy. Such public distress and fear of cancellation led HUHS to hire the top surgeons around the country and begin running test trials.

The "procedure" started off simple. Enhance the brains of students to their maximum possible intelligence level. The requirements were loose; you just needed to be a Harvard student. Of course, when the first test trial student got his "procedure" done, he was finally able to get 100s on his p-sets without "collaborating," and so the rest of his classmates quickly followed in his footsteps. As expected, the entire class performed perfectly on all assignments, leaving the professor with only one choice left to make: get the "procedure" themselves. As the domino effect spiraled out of control, students began to realize they were no longer competing over who was the smartest. There were many more aspects of their personalities that needed to be enhanced in order to stay on top at this school.

At a university with some of the most Type A students in the world, no one would expect the competition to be the race towards the most humor or charisma. Especially since now students couldn't joke about politics or current events, the challenge of making someone laugh was harder than ever before. If you thought comping the Lampoon or punching a Final Club was cut-throat in 2023, imagine the process in 2073. The only way for
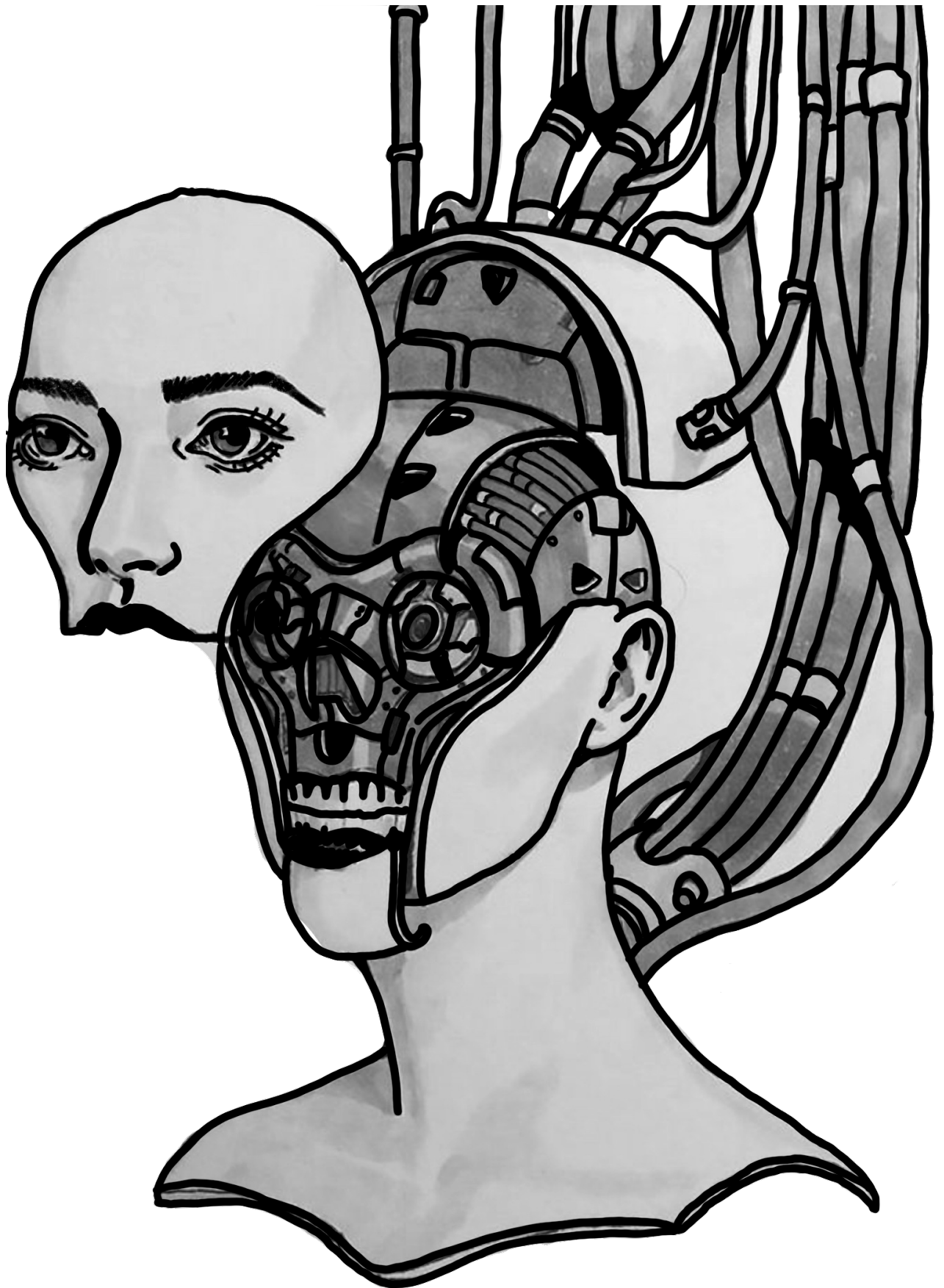
those students who have never been bullied to compete with their funniest peers was to get the "procedure." The "procedure" made you both hilarious and witty. It slowly became an issue when everyone who got the "procedure" started telling the same jokes, having the opposite effect of wanting to stand out from the crowd. The "procedure" led to the downfall of SideChat, as everyone created the same memes. The fall 2073 Lampoon comp had 432 compers, and only let in 2.

While the "procedure" of course had an option to enhance one's entire physical appearance, it was the least popular out of them all. Students became so infatuated with changing their brains, that their looks became the only thing they had left of their true selves. In 2073, Tinder users began adding which "procedures" they had received in order to appeal to those looking for humor, intellect, or cordiality. But, when students finally matched and met up for a date, they realized they had nothing to talk about, as everyone's unique personalities had been stripped away. If dating life was non-existent in 2023, imagine it 50 years later. 60% of Harvard students in 2073 voted that dating another student just felt like dating a robot, and most of the time, the actual robot would be the hotter option.

Harvard students should take this glimpse into the future as a sign to appreciate all that makes you you. At a campus where it feels like we've all been unknowingly signed up for "Harvard's Got Talent," it's hard to not imagine what clubs you'd be able to join or what internship you'd be able to get if you had the ability to say the perfect thing at the perfect time. But, that would just make every student more boring. So, embrace your flaws before you'll have the opportunity to get rid of them all.

ILANA FEDER '26 (ILANAFEDER@COLLEGE. HARVARD.EDU) WRITES ARTS FOR THE *INDEPENDENT*.

GRAPHIC BY EL RICHARDS '26

POINT/COUNTERPOINT: THE MERIT OF ATHLETIC RECRUITING

SHOULD HARVARD KEEP ATHLETIC PREFERENCE IN THEIR ADMISSIONS PROCESS?

BY KATE OLIVER '26 AND JAI GLAZER '27

Jai Glazer: In June, the Supreme Court ruled that Harvard's admissions practices were not in line with Title IV of the Civil Rights Act, eliminating race-based affirmative action from the University's admissions decisions. In the wake of this landmark ruling, new questions are being raised about Harvard's admissions process, particularly whether other groups—such as recruited athletes—should be given admissions preferences. Even though giving admissions preference to athletes is standard among D1 schools, the recent abolishment of affirmative action makes these practices worth reexamining. While athletes should get somewhat of an admissions boost, they are given far greater preference than what is warranted.

Any serious extracurricular provides a boost to a Harvard applicant's overall profile, yet at Harvard, the admissions preferences for athletes are excessive. A 2019 internal report stated that a "typical applicant with only a 1 percent chance of admission would see his admission likelihood increase to 98 percent if he were a recruited athlete."

While their talents are certainly impressive, their dedication to their practice mirrors that of the best musicians and artists. So why does Harvard not take musical or artistic recruits? Harvard has nearly 1,200 athletes, with the large majority of them being recruited admits. Why does no other extracurricular command such a large percentage of the student body? Harvard's extreme preference towards athletes just does not make sense, particularly when compared to other talented groups that have put equal amounts of sacrifice to their respective extracurricular activity.

Even assuming that athletes were a special group that separated themselves from other extracurriculars based on merit, giving athletes such special treatment sparks serious equity concerns. Harvard's athletics program is substantially whiter (83% in the class of 2025 in comparison to 41% of Harvard undergrads) and wealthier (20% come from households that make $500k or more in comparison to 15% of the rest of the class) than the rest of the student body. Harvard proudly boasts that they are home to the most varsity sports teams of any Division 1 school, but this almost adds to the issue. A large reason Harvard has more D1 teams than any other school in the first place is the existence of "country club sports" such as squash, skiing, and rowing that Harvard offers. These sports are dominated by white, affluent students and do not have comparably competitive programs elsewhere throughout the country.

Harvard's athletes also take up a larger percentage of the student body than most other schools. For example, varsity teams at the perennial athletic powerhouse University of Michigan, while having brought in nearly ten times more revenue than Harvard's, actually carry 300 fewer athletes within an overall student body that is several times larger than Harvard. While Michigan's athletics program is made up of 60% white students, the number of student athletes only represent 2.75% of the undergraduate class—compared to Harvard's student athlete ratio of 20%.

Both of these concerns stem from Ivy League policy on athletic admissions. The Ivy Group Agreement states that athletes "shall be admitted as students and awarded financial aid only on the basis of the same academic standards and economic need as are applied to all other students." This statement showcases the fact that Harvard, along with the rest of the Ivy League, considers athletics to be just one part of the college experience and that athletes should not be given special preference when it comes to admissions. However, the Ivy League is the only Division I conference that adopts this approach—all 355 other D1 schools are free to give out merit scholarships to athletes, meaning that they are clear in their prioritization of sports over other aspects of a student's application.

In its current state, Harvard's athletic admissions policies do not align with the University's broader values and warrant careful examination. It values certain skills—such as athletic prowess—over others, such as musical and artistic talent, and reinforces certain racial and socioeconomic boundaries that our country thrives on. Based on the numerous inequities that admission preferences towards athletic recruits presents, they should no longer be given preference in the college admissions process.

Kate Oliver: While athletes at Harvard do have an altered admission process, their decision to commit to Harvard comes at a cost. While Harvard will match financial aid, student-athletes are potentially forfeiting full-ride scholarships to participate in Harvard's athletic programs. Every athlete that commits here knows that there is no absolute guarantee that they will be admitted, hence why they commit "to the admission process." Overall, the contributions that Harvard athletes make to the general Harvard community justify the athletic pull that student-athletes are given in the admissions process.

The success of Harvard athletics often yields large returns in alumni donations, which can ultimately improve the quality of experience for both Harvard athletes and nonathletes alike. While there is no data on donations related to artistic or musical success, a study at the University of San Diego found that winning five more football games than the previous year can increase alumni donations by up to 28% for any NCAA Division 1 athletic programs. There is monetary value in allowing coaches to recruit athletes that will help them perform on the field. Harvard boasts some of the top sports programs in the country, with multiple national champions across sports. This list includes both the Women's and Men's Squash Teams, the Sailing Team, and individual events such as Men's Epee Fencing and Women's Hammer Throw. Winning national titles draws alumni donations, which can be put towards improving the quality of the Harvard community across the board.

In addition to the academic pressures, athletics place serious restrictions on the ability to have a social life. While the NCAA mandates one off day per week, athletes are forced to sacrifice many social, academic, and extracurricular opportunities out of respect for their team commitments. Fall athletes arrive up to three weeks before classes start and winter athletes are on campus almost all of winter break. Spring athletes miss not only spring break but sometimes stay on campus until June—when other students could travel, go home, or rest for a month. It is safe to say that athletes make no small sacrifice so they can perform on the field while having a life outside of sports.

While most athletes are part of the early action acceptance to this school, prospective student-athletes have already been through two rounds of screening before receiving acceptance letters. The Ivy League has an index for athletes measuring GPA and standardized test scores, two factors that also measure the academic abilities of regularly admitted students. For all Ivy League schools, athletic recruits under a certain threshold will not be admitted. At the bottom extreme, athletes with lower standardized test scores must prove themselves athletically and be at the top of their recruiting class. Athletes at the top of their recruiting class, depending on their sport, might have offers to compete at other schools, with the financial incentive of free or discounted tuition. The decision to play at Harvard then comes with a financial cost.

Yet Harvard teams benefit from very little leeway in admitting higher-performing athletes with lower academic qualifications, and student-athletes should not be discounted in the work they put towards school. Anecdotally, Harvard has higher academic thresholds for recruited athletes than any other school, and Harvard teams have some of the highest team GPAs in DI athletics nationwide. In the 2022-2023 academic year, Men's Track and Field and Field Hockey had the second-highest team GPA in the country within their respective sport in season. All this to say, student-athletes work hard in the classroom in addition to contributing to their team's athletic success.

Not only will disposing of athletic admissions greatly reduce the number of student-athletes at Harvard, it will also overlook the sacrifice and perseverance that many qualified athletes have subscribed to for most of their lives. While other non-varsity athletes are able to utilize their free time to improve their resume or pursue extracurricular ventures out of enjoyment, athletes must dedicate the majority of their time to the success of their Harvard team. This unwavering dedication represents many athletes' pure love of their sport and their drive to be the best they can be both on and off the field.

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GRAPHIC BY OLIVIA PARK '27
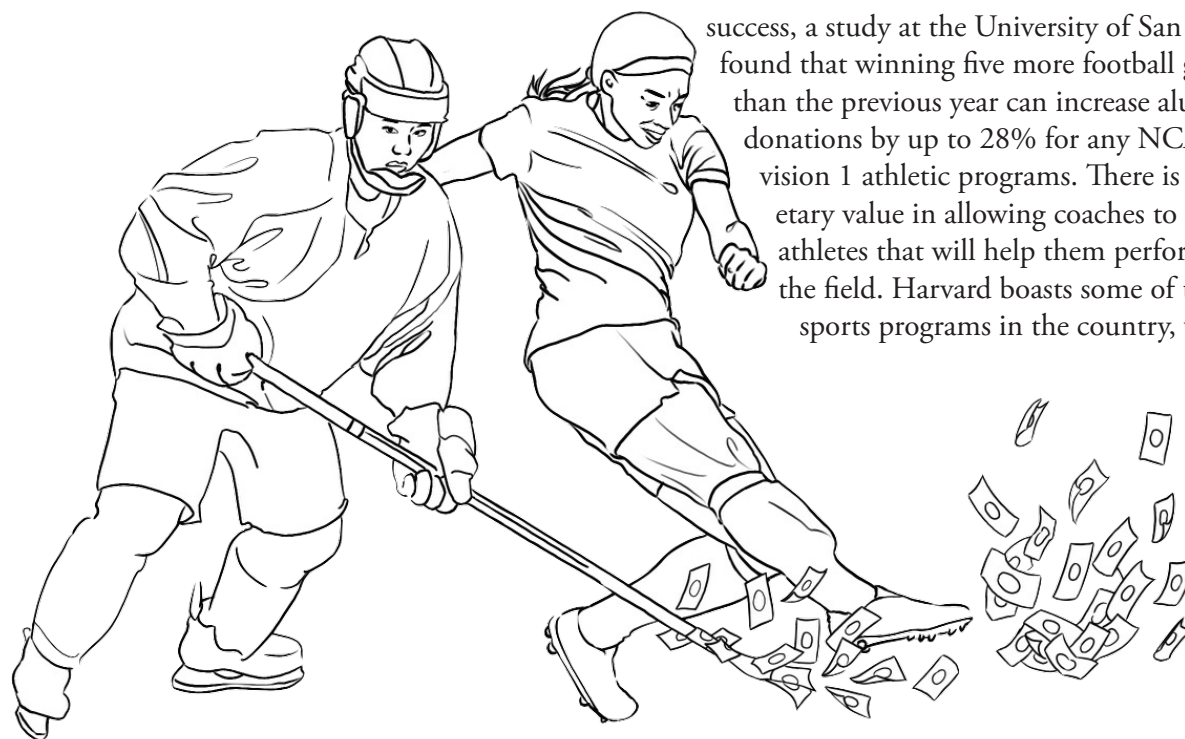
HARVARD V. HOWARD: A LASTING LEGACY

THE IMPORTANCE OF THE IVY LEAGUE ADDING HBCUs TO THEIR EVOLVING SCHEDULE.

BY ANDREW MORRISSEY '26 AND DENNY GULIA-JANOVSKI '26

In the world of college football, clashes between Ivy League schools like Harvard and the rich traditions of historically Black colleges and universities (HBCUs) like Howard have remained a scarce spectacle, but a historic shift is now in the making. Last year's matchup was just the fifth time an HBCU has played an Ivy League school in football. When these two schools face off on the football field, it's more than just a game—it symbolizes the intersection of tradition, history, and the ongoing quest for inclusivity in college sports.

Harvard's football team has squared off with Howard's team three times since 2019 as part of an ongoing agreement between the two schools to help recruit students. Harvard came away with a win Saturday afternoon 48 - 7 to move to 5-0 on the season. Running back Isaiah Abbey '26 led the way with an impressive 120 yards and three touchdowns on 16 carries.

For the Harvard Crimson, the annual matchup against Howard University is a source of excitement and an opportunity to test their skills against a strong competitor. Receiver Cooper Barkate '26 expressed his enthusiasm, and said that "having an annual game against Howard, a non-Ivy League competitor, lets us compete at a new level that we haven't before."

Defensive back Isaac Rollins '26 echoed this sentiment. "It's very exciting and fun to play one of the biggest HBCU names in football," he said. "I think it will be a rivalry as time goes on and a good chance to show that there is a lot of talent on both teams."

"This is a ripe tradition, but I think it is one that should remain in the long term," quarterback Jaden Craig '26 stated. Both institutions boast extensive histories, and the annual game represents a special growing connection between them.

Linebacker Jaeden Kinlock '26 explained, "I see it as a great opportunity for two top colleges that are normally thought of in two completely different worlds to come together and showcase the hard work that their student athletes put in." Beyond the athletic competition, this new tradition holds a deeper meaning. Safety Ty Bartum '26 added, "It offers a cool opportunity for cultural exchange and lasting memories over a game of football." Kinlock also pointed out the energy he expected to see before the game. "I'm looking forward to the incredible atmosphere that Howard and other HBCUs bring with their band, dance teams, and cheerleaders," he said. By showcasing the diverse talents, cultures, and traditions of Harvard and Howard, the game serves as a powerful
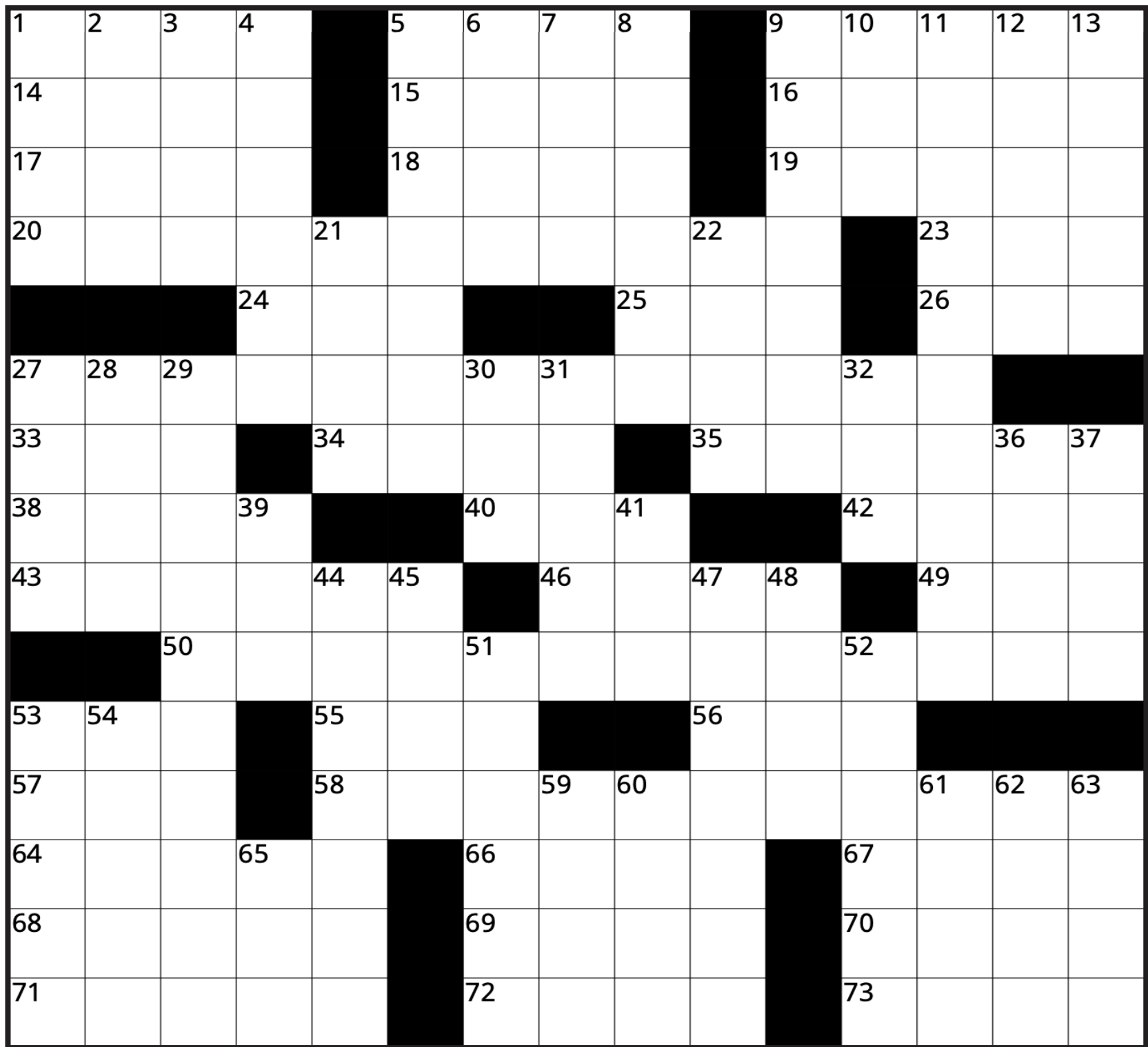

symbol of the fight for inclusivity and unity in the world of collegiate sports.

This annual matchup not only brings together two academic giants but also gathers two distinct cultures. The Crimson recognized the history associated with their program. "Being a part of the Harvard football team means representing not only a prestigious institution but also being part of a legacy that dates back over a century," said Bartrum. Playing Howard every season marks an exciting shift in the landscape of the sport. For the Bison, this annual clash signifies a chance to prove their excellence on a broader stage and establish a lasting rivalry.

Harvard Athletics' attempt to build connections with HBCUs is no accident. In April of 2022, Harvard released its findings on the school's deep and complicated history with slavery. The report highlighted the ways that Harvard has benefited from slavery as well as the recommendations it has for the road to repair and reconciliation. The third of seven recommendations made was to "Develop enduring partnerships with Black Colleges and Universities".

"To provide the resources, the Corporation has authorized a commitment of $100 million for implementation,"- former president Larry Bacow announced the day of the release.

In an interview with the Washington Post, Howard Athletic Director Kery Davis stressed the social impact of last year's game. "Ivy League schools are traditionally really strong academically, and Howard's a very strong academic school, and we wanted people to make that association and understand the importance of athletics as part of the overall institutional curriculum." Highlighting the role of athletics as an integral part of the university's overall educational experience, Davis recognized the significance of sports and extracurricular activities in shaping well-rounded individuals.

In the grand tradition of American collegiate sports, the annual Harvard vs. Howard football game has carved its own unique place. It represents a collection of academic excellence and rich cultural heritage where Harvard and Howard, despite their differences, meet on a common ground. With players embracing this exciting rivalry, the game is not just a contest of athleticism; it is a sign of progression toward a more diverse schedule for Harvard and an increase in opportunities for HBCUs. With their rich histories and passionate players, the Harvard vs. Howard football game promises to be a highlight on the college football calendar for years to come.

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GRAPHIC BY ANNELISE FISHER '26

QUESTION EVERYTHING

BY HAN NGUYEN '27

ACROSS

1 Fashion designer Jacobs
5 Angled piece
9 Have __ to pick
14 Cry __ spilled milk
15 Trig function
16 Brings onboard
17. Director Riefenstahl
18 Lo__
19 Dismal
20 Slumber party game
23 State hwy.
24 __ in India
25 Ladies' org. since 1890
26 Neither's partner
27 Volatile fight
33 Yuck
34 "Zip-___-Doo-Dah"
35 The Onion specialty
38 Dull
40 Fella
42 Spanish "those"
43 "Back to the __"
46 Dire
49 Radical '60s org.
50 Neighbor of an Ethiopian
53 Major
55 Owe
56 Singer Yoko
57 A GI's break
58 Autocratic
64 River to the Rhône
66 What "we want," at ballparks
67 __ gaze
68 __ -master
69 Roll __
70 Unknown auth.
71 Iconic N.Y.C. deli
72 Fed. power dept.
73 Maple syrup source

DOWN

1 Snakes do it
2 Declare
3 Contact solution brand
4 Reviewer
5 Diffused through a membrane
6 Fishing spot
7 Oklahoma's "Wheat Capital"
8 Gracias response
9 Canada's first province alphabetically
10 ____ masque (costume party)
11 __ Line (German/Polish border)
12 "Peachy!"
13 Glacial rage
21 LOL
22 Charlie Brown axpletive
27 __ pastry
28 "House," in Inuit
29 "Awesome!"
30 Society newcomer
31 Artic hazards
32 4G ___
36 Counterparts of cones abbreviation
37 To be, in Latin
39 Yours, in Italy
41 Tulsa school
44 Ships' direction controllers
45 Small sweing case
47 Detail-oriented sort
51 Goddess of witchcraft
52 Peggy Lee and Marilyn Monroe, at birth
53 Like a cool breeze
54 The 'gram
59 Slim
60 Assistant
61 Collector's suffix
62 Crooked
63 Contact __
65 "Mogul Mowgli" star Ahmed

WE BELONG TO NoOne BUT OURSELVES