

Editorial Team:

Samson Shen '24

Hailey Jennato '24

Clara Williams '25



GEOGUESSR: THE VIRAL GEOGRAPHY GAME YOU NEED TO PLAY

By Colin Smith '25

Have you ever been fascinated by the world around you and the little things that make each place unique? If this sentiment even remotely resonates with you, then I have a fun game that can expand your knowledge of the world's landscapes, cultures, architecture, and more! GeoGuessr is a viral online geography game made in 2013 that drops you into a random Google Street

View location and challenges you to pinpoint the exact location. The game has become very popular online since its release and got a huge boost in activity due to the pandemic, which has created a vibrant community of players. Part of the appeal is that there are several ways to play GeoGuessr, so there is something for all types of players. Players can choose to play with

different settings including moving, no moving, panning, or zooming (NMPZ for short), with the latter being the most difficult since the player only has a still image to work with. Additionally, players can play single player to try to get a high score or multiplayer in modes such as battle royale or duels, if they are feeling competitive.

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A SAVIOR, A FRIEND, AND A PARTY

By Edgardo Guzman Accurso '25

The day is September 1st, 2021—the first day for move-in for freshmen. A day filled with parting families, awkward roommate conversations, and, if you're me, a day filled with sadness, regret, and a friend.

I have never been much of a believer, taking things as they come and giving a reason to anything and everything that happened, no matter if it was a suspiciously extraordinary effect or a so-called “miracle.” For me, everything was easy, explainable, and *expectable*. Everything had a cause and effect, and those that believed in a bigger force were ignorant of the truth. That all changed on September 1st though, when somebody showed me the true power of the unexpected, and the real meaning of a miracle.

September 1st was a day that, for many, was filled with happiness. It was the day that marked the exact point we became actual “freshmen” and started our professional careers as adults. I remember seeing students from outside the car, my same age, maybe future friends, running around with bed sheets, towels, and TVs...it was magical. I can still feel the energy of that day. It felt that, even though we were all excited to start this amazing journey, we were also fearful of letting go of our past, childhood memories, friendships, and comforts that we were so used to. However, I believe that our strongest feeling was the sense of belonging we had in our families, one we would be losing as we said our farewells, and got one last look before they drove off far away from Bentley. Some of us experienced this feeling in the airports of our home country, at the door from our home before driving to Bentley, or even never at all, being detached from family members or having none to begin

with. I saw this feeling in every single student outside my car window. I saw the happiness on their faces, the beauty of their smiles, and the meaning of the tears they dropped while they said goodbye. But even though I searched, I still could not find anybody like me, and could not understand why I was the only one inside a car, fighting with my parents, and looking out the window hoping to be one of those friendly faces. It's a little funny that so many significant events could happen in such a small car, where so many words seemed too big and too powerful to remain inside the raised windows that were slowly fogging up from all the screaming, and were hiding those happy faces from sight. Inside the car, emotions of frustration, anger, and disappointment that were hidden for years were all let out. I implore you, however, to not for a second feel pity for the writer, because I was mostly to blame for those emotions.

After what seemed like years of conflict between my parents and me, I was let out of the car, and as soon as I closed the door, they sped off, not a goodbye to be heard or a hug to be received. I remember that in the exact moment when I closed the door and saw nothing but the tainted window of the car as it left my sight, I have never felt more alone. I was in another country, without friends, directions, and suddenly, without a single family member who wanted to talk to me, much less walk with me to a so-called “Slade.” Night came around faster than I thought, without a single notification from my family and without a single friend made, so I did what any rational so-called “adult” would do and searched for the nearest place to wallow. On September 1st, 2021, there was a huge rainstorm in our university, one that forced me to



remain in Slade, specifically the third-floor stairs. While I sat on those stairs, with my head buried on my knees (pretty dramatic, I know), I heard people walk past me, seeing their shadows from the blue floor. I remember laughing so slightly while I heard their reasonings for my situation, “somebody drank too much” or “guess some people are more homesick than others.” Some even stopped and asked the typical, “are you okay?” And even though that was far from what I was, what was I supposed to do? Why burden anybody with my story, while they were having fun on their first night in college? But then something happened, and someone came that changed my life forever. As I saw the door open to the hallway and a figure follow it, I expected the typical quick question or a pitiful glance, but this person sat right in front of me, on the dirty stairs, without knowing me, and for the first time that night seemed

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AN ANALYSIS INTO THE ETHICAL AND LEGAL CONSIDERATIONS OF AI-GENERATED ART

By Hailey Jennato '24

In August 2022, Jason M. Allen's piece of digital artwork, "Théâtre d'Opéra Spatial," won at the Colorado State Fair. However, Allen's win sparked widespread controversy after it was revealed that he did not create the artwork himself, but used Midjourney, an AI image generator (Silk, 2022). Allen spent over 80 hours on his piece, using Midjourney to generate hundreds of images and then relying on other digital art tools to enhance the qualities of his favorite outputs (Silk, 2022). While many argued that Allen's work was not deserving of its win, he technically didn't violate the Colorado Fair's submission guidelines, which define digital arts as an "artistic practice that uses digital technology as part of the creative or presentation process" (Kuta, 2022). Although the competition judges claimed they didn't know the piece was AI-generated (a claim Allen denies), they admitted they would've given the piece first place regardless. The whole situation has raised important questions surrounding the ethical and legal implications of AI-generated artwork.

A variety of AI image generators exist currently, the most popular being Stable Diffusion, DALL-E, and Midjourney. These AI algorithms can identify and recreate different objects and aesthetics because they are trained using billions of human-made images scraped from the internet (Vallance, 2022). The AI models use data from images they've analyzed to generate new images based on a user's text-prompt input. While AI models don't directly plagiarize the art they're trained on, they do take inspiration from human artists. RJ Palmer, a movie and video game concept artist, pointed out that



in some cases, the AI even attempted to replicate the signatures of specific artists it was trained on (Vallance, 2022). Creators and artists often don't consent to their artwork being used to train an AI model, and they don't receive any form of compensation or recognition. Artist David O'Reilly summed up the frustration of creators in an Instagram post, stating that "Dall-E has harvested vast amounts of human creativity – which it did not pay for and does not own or credit—and demands ownership over whatever you make (find) with it" (O'Reilly qtd. in Lang). The Design and Artists Copyright Society argues that artists should be rewarded fairly and should have control over how their artwork is used in AI models (Vallance, 2022).

When AI creates an image, to whom does the copyright belong? Does it belong to the human who came up with the prompt, even if they did nothing artistic? Should the company or programmer own the copyright since they built the AI algorithm? Do

all the creators of the images used to train the AI to own the copyright? It's difficult to tell where AI works originate. A programmer or group of programmers build the AI model, then they (or someone else) feed it input data (which may or may not belong to them), then a user types in a prompt, and then the AI independently generates an output (Walker, 2020). It is possible to argue that the AI is the true artist and therefore the owner of the artwork, as it actually creates the art. On the other hand, AI can be viewed simply as a tool that artists manipulate. AI doesn't have intention. It's not consciously trying to convey a theme or meaning. To it, the art generated in every image is the same: just a series of data designed to most accurately match the user's text prompt.

Copyright regarding AI-generated work is incredibly nuanced and complex. Although AI produces original work, does it copy artists to the extent of infringing on their copyright? In January 2023, three artists sued Midjourney, [\(Continued on page 10\)](#)

SHOES: A WINDOW INTO THE SOLE

By Anna dos Santos-Becker '23

If you Google “history of shoes,” the search engine will return a slew of origin dates and records claiming that the first known shoe was worn sometime between 7000 BC to 1600 BC (Encyclopædia Britannica, Inc, n.d.; SoleScience, 2020). With such a blurry history of the past, I am left to wonder how footwear has come to be a \$381.9 billion global industry (Statista, n.d.). Originally born from necessity, shoes now have close ties to self-expression and identity.

At this point, I am sure most of us are familiar with the idea of being a “sneakerhead” or a “hypebeast,” but even people who are not obsessed with shoes still wear them every day. In fact, sneakers have become so integral to our generation that reportedly 30% of all first luxury product purchases are attributed to sneakers (Pan, 2022). This exemplifies how shoes have become synonymous with status for our generation. But, again, how did we get here?

As a student attending college in Boston’s backyard, I only need to look within the Massachusetts state border to begin uncovering the history of footwear production in this country. For instance, the first shoemakers in the U.S. arrived in 1629 and settled in Salem (Shannon, 1932). In addition, the first record of selling wholesale footwear was in Danvers (Shannon, 1932). Today, the Boston area is home to numerous footwear leaders like Converse, Puma, Wolverine World Wide (home to Merrell, Saucony, Keds, Sperry, and more), and a personal favorite — New Balance. In our increasingly globalized world, there are now “hot” shoe brands popping up all over like Hoka One One based in Goleta, CA or in Zurich, Switzerland.

From Uggs and Crocs to combat boots and platforms, trends are born from this global reach which has helped shape and expand the offerings we see



today. Some come and go while others transcend generations, but here are a few trends you may be familiar with from our lifetime: the Nike Jordan, Adidas Superstar, Dr. Martens, Nike Airmax, Mary Janes, Birkenstocks, and dare I say Jandals (Jesus-sandals)?

With this comes a significant geographic influence, as one could expect, on what exactly ends up on your feet in the morning. For a domestic example, say you are in Maine between the fall and spring. You will find nearly all people around the age of 18 are clad in Bean Boots: a true sense of pride for Mainers. However, if you found yourself in Texas during that same time, you would not see a single Bean Boot. Instead, if you looked down, all you would find are cowboy boots just in time for the spring rodeo season to begin.

Now we have acknowledged a bit about where shoes come from and what exactly is put on your feet, but do you have any say in the matter? Of course! Shoes are integral to understanding and questioning part of one’s personality because there is an element of individual choice. Are they wearing white Nike Air Force Ones because they like them or

because they want to mimic the look of other girls on campus? Is he wearing black Brooks Ghosts because he likes to run or because he has an injury from high school that still hurts him? Is she wearing white Converse Chuck Taylor High Tops in the gym because they are good shoes for lifting or because she doesn’t have any other sneakers?

This choice you make every morning makes shoes a great conversation starter since they are always on display; the next time you see a cool pair on someone’s feet, I encourage you to let them know. They take time and careful consideration to acquire the perfect pair that simultaneously provides comfort, matches your closet and identity, and remains within budget. They have the power to make or break your outfit and make or break your feet after a long day. Shoes help heal, support, and empower those around us. Shoes are really that important, not just because you wear them every day but because they become a part of how others think about you. Shoes convey not only your character but your soul too. Therefore, you should always aim to put your best foot forward.

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SURVIVAL OF THE FITTEST

By Jesus Bautista '25

In a jungle, only the fittest can survive. Animals like squirrels, giraffes, and zebras are consumed by hyenas and cheetahs, who are then consumed by an apex predator: those that are at the top of the food chain. In college, you best hope you're an apex predator. You better know your major before you even set foot in school. If you're at Bentley, studying accounting, economics, or finance, joining the Bentley Investment Group, and having an internship every summer are prerequisites for getting into one of the Big 4. Eat or be eaten, and unless you want to be eaten, you best hope to follow in these footsteps!

I don't know when it happened, but at some point, this ridiculous notion was instilled into college students. Like bacteria, this thought is planted into the back of our minds from the moment we set into school and only multiplies throughout semesters. A friend tells you that you need to know what you want to do by the end of your first semester because someone he knows interned at a big bank where they made \$50 an hour! I've seen way too many students think this is the only way to 'make it.' By their first semester, they're trying to join a million clubs, rush a fraternity or sorority, and apply to 100+ internships they don't even find remotely interesting, all to stack their resume because that's the way to go.

I'm here to tell you that it doesn't have to be this way. I'm qualified to say this too because I was that student. Coming into Bentley, I had no idea what to expect. I thought I was an Eco-Fi major, not because I wanted to be one, but because everyone I knew wanted to be one. I took not one but two internships over my freshman summer in both accounting and finance just

so I could have some much needed "experience." It wasn't until I took my first programming class at Bentley during my first sophomore semester, after one of my friends convinced me, that I realized Eco-Fi wasn't for me. I realized I liked coding more than I did talking about the highs and lows of the stock market. Fast forward six months later, and now I'm applying to the same software engineer and development internships that kids from Harvard and MIT, who've been coding since they were children, are applying to.

Am I less experienced than them? Absolutely. They're most definitely apex predators and I'm not. But I'm glad it turned out this way. Had it not been for that first year, where I had the time to explore what I liked and didn't like, I would've never found a major that I truly loved. What I'm trying to convey is, do not think that there's a timeline to "success." You do not need to have a certain number of internships by your junior year to secure a good future. College is a time of self-exploration. Nobody really knows what they want to do. So, I urge you to take that random class, try out for that club that you think is kind of interesting, apply to study abroad! Do it all, because after you start working, it's unlikely you'll be able to enjoy the freedom you're given in college. Plus, after talking to many alumni from Bentley, I've come to find out that recruiters don't only care about stacked random experiences that you have; they don't want some robot working for them after all. They want to know your story. They want to know what makes you unique, whether that be a research project on something you



find interesting, or a club you're part of like orchestra or gaming. Even those seemingly random experiences can help you stand out during an interview. So, I urge all of you, don't compare yourself to others and don't think that you must do what they do. Work hard at whatever you want to be, regardless of how unlikely it seems, and remember to enjoy the process. If only the fittest survive in college, then it'll be the students that take the time to truly figure out what they enjoy and do good for themselves personally that'll thrive not only during but also after college. To me, they're the true apex predators.



THE EMERGING POWER OF BLOCKCHAIN TECHNOLOGY

By Gabriel Holmes '26

The digital age is propelling at such an exponential rate that it's transforming every industry, especially business. For instance, the increasing popularity of cryptocurrency and blockchains have revolutionized how some of the largest companies conduct business, including Walmart, Microsoft, Mastercard, Bank of America, and FedEx (Sharma 2021). The term blockchain, according to PWC, is "a decentralized ledger of all transactions across a peer-to-peer network." Whenever an involved party wishes to add a transaction, nodes (the computers in the network) must verify if the transaction is valid using algorithms. Once the transaction has been verified, it is added on as a "block" to the "chain." Additionally, blockchains are also secure, as they allow parties to make permanent and encrypted transactions.

As popular forms of trading and investing, blockchain technology and cryptocurrency have gained most of

their traction in the last few years, but the first cryptocurrency and blockchain technology was released to the public in 2009. The two terms have become tied together in a knot, as it is common to associate blockchain directly with cryptocurrency. Although blockchain technology is the original method for exchanging cryptocurrency and is still mainly used for that purpose, individuals have started to realize that blockchains have various other applications in the last few years.

In order to fully grasp the other applications of blockchain technology, the advantages and disadvantages must be distinguished. It's important to consider the economic value of blockchain technology based on its benefits to society and the consequences of its uses. The advantages of blockchain technology are enhanced security, accuracy of transactions, and efficiency (Rodeck, 2022).

The first advantage is enhanced security. Since the ledger is decentralized, it's overseen by an entire network with multiple nodes rather than just a few individuals. If someone intended to make a fraudulent transaction, they would have to hack every single node in the network. Although the anonymity that comes with blockchain technology does make it difficult to track down the users behind fraudulent transactions, the frequency in which those transactions would occur is low. To put it in other words, the risk is low but in the case that a fraudulent transaction is made, much could be lost and hard to retrieve, such as assets, information on business operations, and financial data.

As for the second and third advantage, accuracy of transactions and efficiency are the keys to a successful business, especially in terms of accounting. Less time and effort are required to check if every transaction is correct and valid. Because each transaction is processed

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PROCRASTINATION: FROM THE MIND OF A PROCRASTINATOR

By Isabella Ramirez Perdomo '26

What goes on in the minds of procrastinators? Everything. Who better to explain this than an actual procrastinator? You see, it's not that we don't want to complete our tasks, we do, but sometimes we lose focus. Almost everyone can relate to saying, "It's due next week, I have time," and then finding themselves two days before the due date panicking and stressed about whether they have time or not. However, for most people, it's like a vicious cycle. Many people just get accustomed to working under pressure and believe that their performance is better as a product of this said pressure; but it isn't. In a TED Talk by Tim Urban, he explains the minds of procrastinators. Every brain has a rational decision maker, but procrastinators have a monkey. This monkey is fun, creative, and wants to participate in spontaneous activities that shouldn't be happening in the first place. Think about it, we've all been there. You start by saying that you'll start working on your assignment at 6:30pm, but then somehow it's 6:45 pm, you're still watching Netflix, and you already started the third episode, so you think "Might as well start at 7:00pm," and next thing you know it's 11:30pm and you're on a Super Bowl halftime show binge on Youtube. It happens to the best of us.

When I first sent out my application to write this article I thought nothing of it. Then the email arrived. I thought, "What am I going to do now?" Was I going to procrastinate an article about procrastination? That would've been ironic, but I wasn't, because what example would I be giving? I decided to use this article to test myself and see how well I could organize my time and divide my work. In order to do this I had to set a deadline for myself and also apply the tips I've learned before in order to decrease how much



I procrastinate. In a 2016 Forbes article written by Vanessa Loder, she lists many tips to stop procrastination that have actually helped me in the past. The first tip I use is called "Do a power hour." It may sound strange but it really helps. This tip consists of "putting away all distractions and working in concentrated chunks of time" (Loder, 2016). 'Do not disturb' is your best friend in these scenarios. It will block out any distractions and will also help you get in a working mood, and once you've started you won't want to stop until you've completed at least one task. Another tip that may even be fun is making a bet. As Vanessa states, "It can be very helpful to have an accountability buddy." You can tell a friend or your roommate that you'll buy them coffee or even let them pick the next movie to watch if you haven't completed a task by the set deadline you proposed. This will really make it hard to want to leave everything at the last minute, especially if the movie turns out to be one you don't like at all.

As mentioned above, once you've started a task it is much harder to not finish it; this is called the Zeigarnik effect. What the Zeigarnik effect teaches is that "one weapon for beating procrastination is starting somewhere... anywhere" (Dean, 2022). If we take this into consideration, our procrastination could start to get better. I think we can all agree that procrastination is a serious issue, but with tips like the "power hour," "five-minute miracle," and the Zeigarnik effect, we can all improve on how we complete our day-to-day tasks. Yes, it might be hard to stop procrastinating, but it's possible. Everyone can find their own unique ways to increase productivity and ultimately stop the fun monkey from staying up until 1:00am playing sudoku (Totally not speaking from experience). Remember, although it may be more entertaining and fun to watch a movie or listen to music, the faster you get done with your work, the more time you will have to participate in leisure activities; and the more accomplished you will feel.

BUILDING A BRIDGE

By Janhavi Maniar '25

Ducking behind a large pyramid of toilet paper, 8-year-old me desperately hopes the classmate I saw did not recognize me. *Please don't look this way.* My attempt to remain hidden fails as they look over at me, recollection flashing in their eyes. Their gaze shifts from me to my mother, the woman speaking a foreign language while wearing a colorful kurti, and to my horror, I see the connection click in their head. As an Indian girl growing up in the States, I am stuck in the middle of a tug-of-war between keeping my ancestral culture alive away from home and fitting in with my peers. This constant balancing act has led me, and other first-generation Indian Americans, to be the 3C's: cautious, confused, and challenged.

Our cautiousness stems from our fear of not being accepted in our society. As kids, we avoid judgments and playground bullying from our classmates by acting "cool". When I was in kindergarten, I performed the Indian National Anthem in front of the entire school during the talent show. Dressed in Indian clothes, carrying little Indian flags, I walked on stage. While most of the audience probably had no idea the significance of what I was singing, some adults approached me with questions which I was more than happy to answer. However, when it came to my fellow classmates asking me about my performance and the bindi on my forehead, I felt myself shying down. These were kids I played with on the playground, and I could only imagine them not wanting to play with me, or worse, bullying me. When they started laughing at me, I mumbled "Nothing" and moved away, desperately hoping the day would end quickly so I could go home and change out of my clothes. It would take until my late teenage years before I would start to feel comfortable sharing my heritage with others. There are many others who have had similar



experiences with hiding Indian culture from their peers in order to fit in, and it can take years to regain that confidence to share the culture with others.

We are confused as well, struggling to find our identity because it feels as though we are split into two separate ones: our American side and our Indian side. Should we watch a classic Bollywood movie that we know all the dance numbers to or the new Hollywood movie everyone in the school seems to be talking about? We go out for pizza with our friends but secretly spend the whole time craving naan and paneer. We learn early on the importance of balancing both worlds. The confusion we face challenges us to find an identity that is the right blend of our two personalities. We want to honor our heritage and keep it alive, all the while fitting into the society we live in. This leads to a fusion of cultures. We introduce our non-desi friends to our food, music, and movies. When Navratri rolls around, we bring them to Garba and give them brief lessons on the steps. In return, we tell our parents about the American holidays and traditions we learn about at school.

But despite our best efforts, we struggle to feel like we have a place in either group. We are considered too Indian for Americans and too American for Indians, which leaves us floating somewhere in between. Neither side seems to properly understand because they haven't had to juggle the two experiences at the same time. During my visits to India, people are often shocked that I do not have a western accent when I speak the local languages and that I understand their cultural references. But they will still ask me questions about my life in the US that are more centered around my American persona. Similarly, people in the US ask about life in India and the culture there. While I am more than happy to talk about these things, there seems to be a subliminal message that I am an outsider. We seek refuge in one another, children of immigrants, who empathize with the struggle of finding our authentic identities. Which is why I sit, with others like me, on a bridge between the two worlds.

GEOGUESSR: THE VIRAL GEOGRAPHY GAME YOU NEED TO PLAY *(Continued from page 1)*

Initially, the game can be very difficult and overwhelming due to the monumental task players must complete. Earth is so massive, how are we supposed to know where a place we've likely never been to before is even located? There are actually a lot of complex strategies and hints contained in any given location that give high-level players more than enough information to guess the country, region, or even the exact location accurately. The easiest clues to deciphering a GeoGuessr location cannot be found in every image, but they can be giveaways if you are lucky enough to spot them: country flags, languages, web domain names (.uk denotes the United Kingdom for example), and road signs. These clues help players immediately narrow down the choices of countries to one or a few options. Beyond that, there are clues that appear in every round that aid players in guessing. Landscapes, climates, flora, road markings, poles, and architecture will all give you insights into the potential region or country once you've built up experience. Advanced players are

able to identify specific regions based on small clues like pole markings or roadside bollards. The cover image of this article, for example, features a pole found commonly in Latvia, making a seemingly non-descript round easy for knowledgeable players. Players will even use outside knowledge of Google Street View to identify their locations. For example, an experienced player will know that not every country is covered by Google Street View and that some countries have more coverage than others (France has many more locations than Germany, for instance). The imperfectness of Street View has led to players creating wild tactics for deducing their location. In Kenya, the Google car used to capture Street View is visible and it has a unique snorkel attached to the front only found in that country. An even more obscure tip players have found is that the camera used to capture Street View on a specific highway in eastern North Macedonia has three dead flies stuck in the corner.

All of these factors might make GeoGuessr seem more intimidating

to play, but in the end just playing the game for fun makes it worthwhile. Experiment with different maps and settings, build experience guessing different countries, and you will soon discover you've gained a better understanding and appreciation of the world while having fun at the same time. Some people prefer to study niche clues to master their skills while others prefer to trust their instincts to guess their location. Either way, GeoGuessr provides an irreplicable experience that builds your knowledge of world culture and geography. I considered myself to be a geography guru but playing this game gave me a new perspective on the world. It is one thing to know where a country is and what its capital city is called, but it's another thing to actually be able to see what the country looks like across different regions while having the ability to roughly distinguish them from each other. As such, I believe that GeoGuessr is an exceptional experience that better connects the player to the world around them while also being one of the most fun games I have played.

A SAVIOR, A FRIEND, AND A PARTY *(Continued from page 2)*

to actually care whether I was okay or not. Something about him made me open up and tell him how much I messed up, how much I regretted my decisions, and how much pain I was in. He listened without letting the sound of a party in the distance distract him. After letting my heart out, I realized that I had told all of this to a stranger, one who would probably tell me some typical "everything will work out" speech, give me a pitiful smile, and move on. But to my surprise, I remember him saying the words "You can worry about that tomorrow, because tonight you are partying with me." This stranger, who

probably just met the biggest buzzkill ever, invited me to hang out with him, and even though he didn't realize it, that simple invitation saved me that night. I eventually succumbed to his request and joined him in his adventures for the night. After that, when I thought that I would never see this person again, I found out that he actually was going to be living exactly one foot away from me, in a dorm room right in front of mine, and I am glad to consider him one of my best friends to this day.

Looking back on that day, how can I not believe in fate after what happened to

me? The fight, the rain, the building, the specific floor, and the specific person who ended up living right across from me seemed like too many coincidences all at once that even somebody like me had to give in to fate. I tell you this story not for you to become a "believer" in fate, but to open your mind, and heart, to those around you. We often think we are stuck in a predicament, but the unexpected always catches us at our lowest point, and sometimes it takes a savior, a friend, and possibly even a party to let us see a way out, and change the course of our lives for the better.

...ETHICAL AND LEGAL CONSIDERATIONS OF AI-GENERATED ART *(Continued from page 3)*

Stability AI, and DevianArt for using Stable Diffusion, claiming that Stable Diffusion violated millions of artists' copyrights. However, Stable Diffusion creators argued that they were allowed to use existing pictures to train their AI under the "fair use" doctrine, which states that copyrighted materials can be used for "transformative" purposes (Wilde, 2023). It is difficult for artists to claim copyright infringement when their images are scraped from the internet and fed to an AI model, and many don't have the resources to fight legal battles (Vallance, 2022). As Professor Lionel Bently, director of the Centre for Intellectual Property and Information Law at Cambridge University, explains, in the UK "it's not an infringement of copyright, in general, to use the style of somebody else," suggesting that AI models do not infringe on an artist's copyright by mimicking their style or aesthetic (Bently qtd. in Vallance, 2022).

If the artists of images used to train AI models can't claim copyright infringement, then can the creators and users of AI models receive copyright protection on the AI-generated art they make? In the US, the Copyright Act of 1968 states that "the author of an original work owns the copyright to that work," and courts have reinforced that, in order to be eligible for a copyright, the work must be "of independent intellectual effort" and originate "with an author or joint authors" (Walker, 2020). In February of 2022, the US Copyright Office refused to grant a copyright to an AI-generated piece of art because of the lack of "human authorship." The case was appealed however, as

the programmer argued that, as the creator of the AI, he owns any of the work it produces (Plunkett, 2022). While it makes sense that AI-generated work can't receive copyright protection because it wasn't produced by a human, Macquarie University's Dr. Rita Matulionyte explains that if AI artwork isn't copyrighted, then "it belongs to the public domain, and anyone can freely make copies of it, distribute it, use it for commercial purposes" (Matulionyte qtd. in Walker, 2020). This doesn't seem fair to the creator of the AI model or the user that actually made the image. Under UK law however, computer-generated works are "owned by the person by whom the arrangements necessary for the creation of the work are undertaken" (Matulionyte qtd. in Walker, 2020). But this brings us back to the original question: who is responsible for an AI-generated image?

The problem becomes further complicated when considering illegal material generated by AI. AI tools like Stable Diffusion and Midjourney make it incredibly easy to spread disinformation, quickly create deepfakes, and produce nonconsensual pornography. Women are most at risk, as a 2019 study "revealed that, of the 90% to 95% of deepfakes that are non-consensual, about 90% are of women" (Wiggers, 2022). Google has also warned that datasets used to train AI models contain pornography, discriminatory and stereotypical material, as well as other harmful content, which influences the images they output (Vallance, 2022). Despite filters for illicit materials and the fact that this type of behavior breaks the license terms of

many AI image generators, it is still easy for individuals to abuse these platforms. Who should be liable for the harm caused? The programmer who built the model or the artist who input the prompt? Both? Neither?

As AI tools continue to evolve and become more prominent, ethical, legal, and regulatory questions around the creation of AI art will continue to persist.

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SHOES: A WINDOW INTO THE SOLE *(Continued from page 4)*

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THE EMERGING POWER OF BLOCKCHAIN TECHNOLOGY *(Continued from page 6)*

by nodes using algorithms, any fallacy in the transaction will be detected and will be blocked from entry. In addition, assets in the blockchain are individually tagged and traced so no double-spending can occur. The efficiency comes from the lack of need for intermediaries. Business transactions can be made in quicker succession because they don't need to be verified by a bank or third-party company, a process that could take up to several days. In addition, blockchains run 24/7 so international business transactions don't have to leap over the usual hurdles with distance. With the efficiency and security that comes with blockchain technology, it would make sense that large companies like Walmart would conduct business through the decentralized ledger because of its mass daily transactions with hundreds of vendors.

However, there are disadvantages to the use of blockchain technology as well. Not only does it require a long time to track down fraudulent transactions, but there also are issues with assets, scalability, and social cost (Rodeck, 2022).

The first downside is the potential permanent loss of assets. For some assets, once they are entered into a blockchain, a key correlated to that direct asset is required in order to access it, so only the party or other parties given permission with the key can access the asset. If the key is lost, that asset cannot be accessed. The decentralized ledger means there is no central entity or authority that can recover the key.

Second, blockchain technology is limited in the speed of its transactions. Although there is efficiency in not having to wait for third parties to process transactions, blockchains require a longer time to confirm transactions. There are blockchains that can process tens of thousands of transactions per second, but the confirmation time can be as long as an hour. To put in terms of throughput, which is transactions per second (tps), Bitcoin has 7 tps and Visa has 24,000 tps (Crypto.com, 2021). There are cryptocurrencies that have a tps close to Visa, but their confirmation time is much too long in comparison to Visa. You could buy a cup of coffee using a slow cryptocurrency, considering you're willing to camp out in the coffee shop overnight. As of right now, blockchain technology cannot properly be scaled to be as widespread as Visa, but that could change in upcoming years.

The last issue is the social cost of blockchains in terms of cryptocurrency—the cost of its impact on the environment. In September 2022, professors in the Department of Economics at the University of New Mexico published a study concluding that cryptocurrencies exhibit “sustainable red flags.” They noted that as the industry progressed, the climate damage per coin was increasing rather than decreasing. Most of the time, the damage cost caused by Bitcoins exceeded the creation of each coin. The final finding was that for every \$1 of Bitcoin created, there was \$0.35 cost in climate damage on average,

putting the effects of Bitcoin mining in competition with beef production and the burning of crude oil (Jones, 2022).

In terms of cryptocurrency, blockchains allow for very profitable ventures but incredibly contribute to climate change damage at a large social cost. However, blockchains provide seamless airtight business operations, which is an unbelievable asset for public companies. Needless backtracking and reviewing could be avoided before reporting their 10-Ks. And within the next few years, blockchains will be able to quickly confirm transactions, increasing its scalability. One thing is for certain, blockchain will transform businesses into an entirely different entity.

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Editorial Team



Samson Shen '24

Chief Editor

Major: Quantitative Economics

Minor: Sociology, French
(He/Him/His)



Hailey Jennato '24

Major: Marketing

Minor: Media Arts LSM
(She/Her/Hers)



Clara Williams '25

Major: Accounting
(She/Her/Hers)

Contributors



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Major: CIS

Minor: Data Technologies
(He/Him/His)



Edgardo Guzman '25

Major: Management

Minors: CIS and Law
(He/Him/His)



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(She/Her/Hers)



Isabella Ramirez '26

Major: Finance

Minors: Politics
(She/Her/Hers)



Anna dos Santos-Becker '23

Major: Quantitative Economics
(She/Her/Hers)



Colin Smith '25

Major: Data Analytics

Minors: Business Studies and CIS
(He/Him/His)

Honors students, keep an eye out for the opportunity to write for the Fall 2023 Issue of *Columnas*.