



NORTH STAR PATHWAYS

A Deeper Look Into AI

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What is AI?

In our last issue we discussed how you as a student can maximize the use of AI in your time in college. But that does raise a question, “What actually is AI?” Since we will be spending this whole issue understanding AI, how it will change education, and how it will change the job market, it will be helpful for us to understand it first.

AI, or artificial intelligence, is the ability of a computer or a machine to copy the human process of thinking. This term came from the 1950s when computing machines were first being used widely in research. Now AI comes to mean a wide variety of ways computers can “think” like humans do.

AI refers to a variety of different systems with different programming softwares and “languages” (a structured way of

organizing coding data, for instance computer games are often written with Java). These programs will try to gain more data and create rules for that data to turn it into action. This creates a series of steps to complete specific tasks. Additionally AI will often choose between various sets of rules (called algorithms) to achieve a certain goal. Lastly a common function of AI is designing the program to have the ability to self correct. By detecting patterns in data, the program can make predictions and recommendations without being specifically coded to do so by its programmer, similar to how a student will be given a problem by a teacher and try to reason through it without being given the answer.

AI is also often associated with terms like “machine learning” or “deep learning.” Machine learning is very simply this

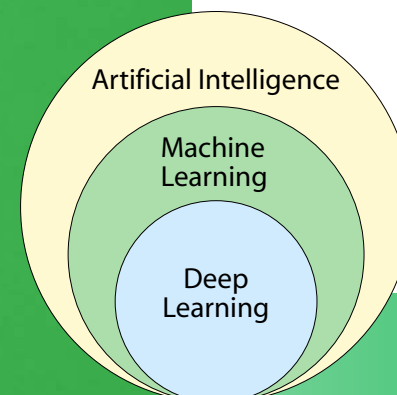


pattern detection process that algorithms are programmed to spot and act on. Deep learning is a more nuanced form of machine learning, where programs try to simulate how the human brain uses neural networks to process massive amounts of data in multiple different ways almost instantaneously in order to reach several conclusions. For instance when a program can “recognize” an image as a car or a building, this is done through deep learning. Deep learning relies on several different types of artificial neural networks in order to achieve this.

Due to the widespread adoption of computers in virtually every element of daily life – from the phone you carry with you to the car you drive – AI has the potential to revolutionize life. This will include your time in school, the job you choose or even the hobbies you start. Hopefully this issue will help you navigate how to best use this new and interesting tool.

Some questions to discuss with your class:

- ◆ What more would you like to learn about AI?
- ◆ What have you heard about AI before reading this?
- ◆ How do you imagine AI will change your time in school?





How Will AI Affect Jobs?

1 Data Entry Positions

For many younger workers, this can be an early office job to help catapult you to a more serious, full time position. However due to its repetitive nature and lack of serious thinking skills required, it can be very easily done by a computer. Furthermore a computer can process through huge amounts of data faster than a human worker can. Even more worryingly for data entry processors, a computer program does not need to be paid or provided benefits. They don't take sick days or vacation days and don't become HR liabilities. For many bosses, replacing data entry positions and similar jobs is a no brainer

2 Factory Workers

This was once one of the most iconic jobs in America, providing many families a way into the middle class. However since the 1950s, industries have increasingly become less reliant on manual labor due to automation and robotics. In a factory, usually assembly requires constant and repeated action, over and over again. By being able to automate this simple thinking process, industries will continue to shed workers in favor of few skilled workers overseeing a large amount of robots. What was once a human assembly line like in Ford's old automobile factories is now a highly automated process where robots do most of the physical work.

3 Drivers

Initially this does not seem very intuitive. After all, driving requires a lot of knowledge and the ability to rapidly process a lot of high stakes data all at once. However unmanned flight is already mundane as drones went from a highly experimental military tool to a very common toy. Driverless vehicles from long haul trucking to cabs at the airport are likely to lower costs but reduce jobs at the same time.

Ai seeks to add to, or, in many cases, replace the human process of thinking. By removing the step of requiring a human being to think through their task, and by being able to often do it significantly faster, AI has the potential to eliminate many jobs that were once thought to be incredibly vital. Just like how cars replaced the horse and buggy, AI will likely leave many American workers in the dust. Learning what jobs are most vulnerable to AI, and which jobs aren't, can help you plan for the future.

Which Jobs Can Be Replaced?

One 2023 study from the University of Pennsylvania found that 15% of all tasks could be done much faster by an AI program. Study also found that around half of all tasks could be done by an AI around as fast as a human being. Finding out which jobs are prone to elimination could save you the time and stress of finding a new job.



4 Research Analysts

This is another position that seems safe. After all, the ability to research, think, and present feels very human to us. But research analysts have to work with a lot of repetitive data and have to spend a lot of time processing that data in order to reach conclusions and recommend action. However AI can often process and organize that data far faster than even a large team of analysts could do. This doesn't mean there won't be research analysts. However it does mean anyone who works in research will have to become proficient in using AI programs as well as mastering soft skills like spoken communication.

What Jobs Are Protected?

The concerns over AI are leading some schools to take the initiative in highlighting "AI proof" jobs. Colleges like Western Governors' University (highlighted in an earlier *Pathways* issues), advise their students to focus on jobs that require a human presence, creativity, and empathy.

1 Teachers

While commentators often talk about AI and its impact on students, AI will also have a large effect on teachers as well. Despite those challenges (which we will

discuss in our interview with Kyle Garza, a high school English teacher later in this issue), teaching is still a very human endeavor. The phenomenon of distance learning during the recent COVID-19 pandemic, showed us that a human interacting with us in person was absolutely key for increasing students' learning potential. According to the U.S. Bureau of Labor Statistics, teaching jobs are consistently expected to grow by at least 5% (more if you have a graduate degree) over the next decade.

2 Medical Professionals

The medical profession is very similar to teaching in that people highly value that in person connection. The ability to empathize as well as diagnose is just as important. Just like teaching, AI will also likely change how doctors, nurses and specialists perform their jobs but it will not be a replacement for a human being caring for a patient, assisting a patient's family, or performing a surgery. Medical jobs like nursing are expected to grow by an average of 6% over the next decade.

3 Sales Professionals

This is not always a job that many think of as they get out of school, despite the fact that as of the 2020

Census there are over 5.7 million Americans that report their job as being sales related. Having a great product does not mean much to a business unless real people hear about that product and are convinced to buy it. Much of that process can be aided by AI. Everything from finding customers to organizing a marketing campaign can be improved by machine learning programs. However at the end of the day, a real person has to reach out and convince people to purchase a product or solution. Depending on the industry, sales and related fields are expected to remain relatively stable despite the AI revolution.

Hopefully these predictions can help you and your classmates figure out what may be the right path for you. Some questions you and your teacher may want to go over can include:

- ◆ Are there any other jobs you think might be vulnerable to AI replacement?
- ◆ What is most important to you: job stability or job satisfaction?
- ◆ Do you think it is more important to specialize in a particular skill or learn a wide variety of skills in a job?

Review:

Occidental College

Occidental College (informally Oxy) is a private liberal arts college in Los Angeles, California. Founded in 1887 as a coeducational college by clergy and members of the Presbyterian Church, it became non-sectarian in 1910.

Should You Attend Occidental College?

Occidental College, often known as Oxy to its students, faculty and alumni, is a private liberal arts college in California. Located in Northeast Los Angeles, it is one of the oldest liberal arts schools on the West Coast. But is it right for you?

Quick Facts:

Occidental College (its name coming from the Latin for “Western”), was originally founded in 1887 as a co-educational Presbyterian college. However in the early 20th century it was no longer affiliated with any religious denomination. Despite its smaller student population size (always roughly 1,900 students a year), due to its robust academic program, Occidental College has an extremely long list of notable alumni across the world.

Costs:

Annually its tuition and fees (separate from room and



Established
**April 20,
1887**

board), comes out to \$63,446. If room, board, books, supplies and expenses are included, this total increases to \$80,636.

However when calculating college cost it is important to remember the net cost, not the total cost. The net cost is the actual price you will pay after scholarships and any needs based aid. The average net cost for a student is just over \$35,000. This too, can vary a lot depending on your family's household income for the previous tax year. For a student from a family making under \$30,000 the net price after aid is just over \$13,000 but for a student from a family making over \$110,000 the net price after aid is over \$44,000.

Academics:

Occident College offers 45 different majors, minors and programs in the liberal arts including Asian Studies, Biochemistry, Computer Science, Geology, and Sociology. Occidental College is considered one of the best liberal arts schools in the United States. Just this year the U.S News & World Report's rankings for liberal arts colleges found Occidental tied for 35th overall.

Student Life:

The campus is located on a 120 acre property with 12 different dormitory halls to choose from, though first year students are not given the option to choose. The campus is built in a Mediterranean style that was



popular in late 19th and early 20th century California. Occidental's campus has been regularly voted as one of America's most beautiful in *Newsweek*.

There are several student organizations and clubs, including Greek life, as well as student run media like *The Occidental* and KOXY, a local radio station. Additionally Occidental College has a full athletics program, the Occidental Tigers, and competes in the Southern California Intercollegiate Athletic Conference and is Division III school in the NCAA. Roughly 25% of the student body competes in its sports program.

ROTC & Military Resources:

Occidental College does have ROTC programs, specifically the Army and Air Force but these are offered in partnership with local colleges. For the Army ROTC program, it is offered on Claremont McKenna's campus and the Air Force ROTC program is offered in conjunction with USC.

For veteran students, Occidental College runs a Veterans Program to help find student veterans find housing while

attending the school. Occidental College student Aaron Hammond, a former serviceman in the U.S Air Force, said this about its program:

At every turn, the staff and faculty of Occidental exceeded even the most ambitious of my expectations. Every day, the rigorous classroom environment and enthusiastic student body prove anew that Occidental was the perfect choice for me. Words alone cannot express the depth of my gratitude

Return on Investment:

On top of its relatively high rankings, Occidental College has a very high return on investment for its cost. 77% of students have a 4 year graduation rate, which is above the national average. Additionally, the school boasts a very low student to faculty ratio (9:1), and 70% of classes have fewer than 20 students.

That being said, the average student usually will leave school with roughly \$27,000 in student loan debt and a median salary of a little over \$33,000. This is somewhat lower than the average student loan debt for students across the country. However, the median starting salary is lower than the national average of \$47,000.

Notable Alumni:

Occident College has many extremely notable alumni, including:

- ◆ Barack Obama, 44th President of the United States
- ◆ Ben Affleck, actor, director, screenwriter
- ◆ Steve Coll, former *Washington Post* managing editor,

Pulitzer Prize winner

- ◆ Dr. Howard Judd, medical doctor and renowned medical researcher on women's health
- ◆ Jack Kemp, NFL player, U.S. congressman, U.S. Secretary Department of Housing and Urban Development and vice presidential nominee in 1996

Is It Worth It?

Occidental College can be a great choice for someone depending on what type of school experience they want. For those interested in moving to southern California, it can be an ideal college experience. Also, students who want to focus on the liberal arts will find an extremely rigorous academic experience combined with an impressive alumni network. However you are looking for a more economical choice or a school more focused on the hard sciences, Occidental may not be the right fit for you. Some questions for yourself and the class can be:



Review:

Kenyon College

Kenyon College is a private liberal arts college in Gambier, Ohio. It was founded in 1824 by Episcopal Bishop Philander Chase. It is the oldest private institution of higher education in the state of Ohio and enrolls approximately 1,800 undergraduate students. Students choose from over 50 majors, minors, and concentrations, including self-designed majors.

Established
1824;



Should You Attend Kenyon College?

Kenyon College is located in rural Ohio and provides a traditional liberal arts experience to students who want a small, private college experience. But is it the right choice for you?

Quick Facts:

Kenyon College was founded in 1824 in Ohio by Philander Chase, an Episcopal bishop, though the school is non-denominational. It is the oldest college in Ohio and is located in Gambier, Ohio on a 1,000 acre campus set in the country. Its educational focus is on a traditional liberal arts education for undergraduate students.

Costs:

Kenyon College is a fairly expensive college with annual tuition of \$69,330 with an annual room and board charge of \$14,410. This is somewhat more expensive than the national average for colleges and universities in the U.S.

That being said, the average needs-based aid package for students is \$54,015. However your total net price will differ by your family's household income. For a student from a family whose household income of less than \$30,000 will be slightly higher than \$13,000 but a student from a family whose household income of over \$110,000 will be around \$44,000.

Academics:

Kenyon College takes its focus on the liberal arts very seriously and all students have to take classes from all four of its main academic divisions; the humanities, natural sciences, the social sciences and the fine arts. Additionally Kenyon students are required to take a foreign language to graduate. The most popular majors at Kenyon College are English, economics, psychology, political science, and history.

Student Life:

Kenyon College not only has a variety of different student traditions dating back to the 1800s but a multitude of student clubs for undergraduates to participate in. Students can join organizations like the Rural Cause, which allows students to volunteer in rural Ohio, the Beekeeping Club and BridgeKenyon, which is a political debate club. Kenyon College also puts a heavy emphasis on civic involvement in order to create engaged citizens.

Kenyon also has a full athletics program for both men and women and competes in the North Coast Athletic Conference. It offers many sports like men's baseball and women's basketball. Its most notable team is the men's swim team which competes in NCAA Division III and has won 34 program titles, the most in any sport in the NCAA.

ROTC & Military Resources:

Kenyon College does not have an Reserve Officer Training Corps but it does provide resources for its military students and participates in the Yellow Ribbon program for veteran students.

Return on Investment:

Kenyon is definitely a fairly expensive college with an annual cost that is well above the average for most colleges in the United States. However it is also a highly ranked school. The U.S. News & World Report ranks it as the 39th best liberal arts college and the 66th best value school in America.



84% of students graduate on time and 74% of classes have fewer than 20 students. This allows for a high level of one on one student-faculty interaction. While the average debt upon graduation is \$24,719, the median starting salary is \$32,179.

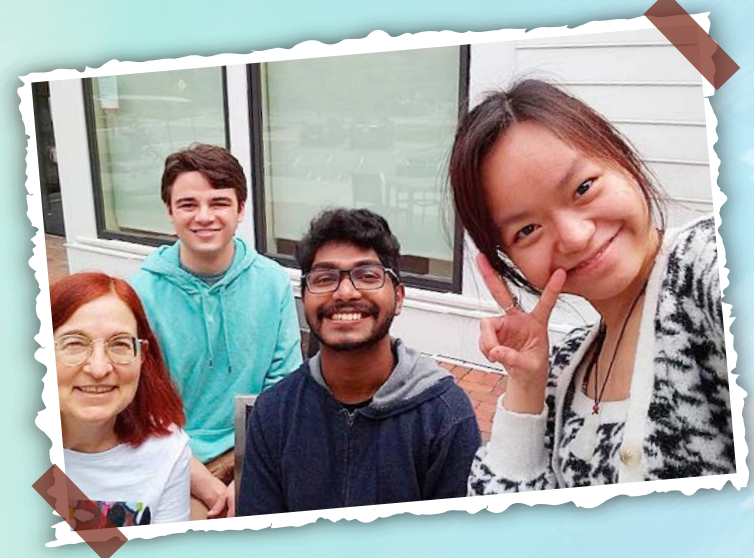
Notable Alumni:

- ◆ Ralph P. Buckland, Union Army general during the Civil War
- ◆ Josh Radnor, actor and filmmaker, best known for his role on How I Met Your Mother
- ◆ Olof Palme, the Prime Minister of Sweden
- ◆ Rolla Dyer, developer of the typhus vaccine and director of the National Institutes of Health
- ◆ Leopoldo López, opposition Venezuelan politician and dissident

Is It Worth It?

For a student who wants the traditional, liberal arts experience, Kenyon College can be the perfect fit. This will require a serious approach to grades as it is one of the most exclusive schools in the U.S. It will also require a significant amount of financial resources or financial aid. However if you are looking for a more technical school or something cheaper, Kenyon College may not be right for you. Some questions that you and your class can discuss could be,

- ◆ What subjects should students study in college?
- ◆ How much money should I spend on my college education?
- ◆ Do I want to go to college in the countryside or in a large city? What are the upsides and downsides of each?





Review: Ogeechee Technical College

Established
1987

Ogeechee Technical College (OTC) is a public technical college in Statesboro, Georgia. It is part of the Technical College System of Georgia. OTC serves Bulloch, Evans, Screven and surrounding counties.

Should You Attend Ogeechee Technical College?

Ogeechee Technical College is a public technical college in Statesboro, Georgia. For a smaller technical college, it has a wide array of different specialties and a large online presence. But is it the right school for you?

Quick Facts:

Ogeechee Technical College was founded in 1987 as the Ogeechee Technical Institute as a way of assisting the local economy in Georgia. It was renamed as Ogeechee Technical College in 2000. Like many public technical

colleges, its highest degree offered is an associates degree. Many students use their time either to transfer to a four year institution or to start their career.

Costs:

Ogeechee is much less expensive than many other colleges in the United States. For students who are in-state, tuition and fees are limited to \$3,140 and for out-of-state students, the tuition and fees are \$5,540. The application fee is \$25.

Academics:

Ogeechee's academics are aimed at the workforce of Georgia. As a result, most of its academics are technical in nature and focused on disciplines with an immediate

career impact. Students can study everything from agribusiness, commercial truck driving, logistics management, nursing, and welding, among others.

Many of these programs are offered with classes online and several are entirely online, specifically; accounting, business management, business technology, computer information systems, criminal justice, early childhood care & education, health information management technology, radiology, and technical studies.

Student Life:

Ogeechee is located in Statesboro, Georgia which has a smaller population of just over 33,000. The school

lacks many of the traditional campus life amenities of a four year institution but it does have a student government organization and multiple student clubs such as the Future Business Leaders of America, the Radiologic Technology Club and the Student Veterans Association.

ROTC & Military Resources:

As a technical college, Ogeechee does not have a Reserve Officer Training Corps. However it does designate a program for assisting veterans and currently serving students, helping them navigate financial aid and adjusting to an academic career.

Return on Investment:

Ogeechee has a much lower investment cost than many other colleges with very low tuition and fees. Additionally it is often ranked as one of the better technical colleges. Niche, a student ranking newsletter, rates Ogeechee quite well, giving it an A- for value. The median starting salary for students is around \$21,500, though this will vary by the type of student and which program they took.

Alumni Spotlight:

As a new college, Ogeechee often highlights what their alumni can do with a relatively cheap investment in their education. For instance, recently they chose to highlight:

- ◆ Rebecca Relyea, a professor of Radiologic Sciences. Professor Relyea was a radiologic science graduate from Ogeechee who then went on to get a bachelor's degree from the College of Saint Rose and then a master's degree from Excelsior College. Ogeechee



helped her restart her academic career when her then-current school in Vermont had shut down.

- ◆ Kayleigh McCall got her CDL license as a commercial truck driver in 2020. After feeling burnout with her old job, she was able to turn to Ogeechee to become a commercial driver and has recently become Schneider National Transportation's 2021 Featured Female Driver. McCall said of her time at Ogeechee: ***"I love everything about it. It's empowering. When I got my CDLs, I was in a rough place, and I needed something to help me feel better about myself, to empower myself. And so, this has done it."***

Is It Worth It?

Ogeechee is definitely the right fit for a certain kind of student. For a student who has a particular need, an

interest in restarting their careers, or looking at a high value, inexpensive online education. If you are looking for a big city school, a traditional college experience or a more liberal arts style education, Ogeechee will definitely not be the fit for you. When considering a school like Ogeechee, a student should always think about a few questions like:

- ◆ What do I really want in a college education? Do I want an experience and network or do I want to skip right to my career?
- ◆ How much money do I feel comfortable spending and potentially borrowing?
- ◆ How much does location influence where I want to go to school?

Review:

Southern New Hampshire University

Established
1932;



Southern New Hampshire University (SNHU) is a private university between Manchester and Hooksett, New Hampshire. The university is accredited by the New England Commission of Higher Education, along with national accreditation for some hospitality, health, education and business degrees.

Should You Attend Southern New Hampshire University?

Southern New Hampshire University (SNHU) is a unique school with both a vibrant, small campus student population and a large online presence. But is it right for you?

Quick Facts:

SNHU was founded in 1932 as a school focused on teaching business. The school's name was initially the New Hampshire School of Accounting and Secretarial Science. The school became a not for profit college and then eventually was renamed the Southern New Hampshire University as it began to absorb local colleges in the New England area. Once the Internet became more popular in the early 2000s, SNHU began to offer online courses and degrees.

Costs:

Unlike many schools, SNHU recently reduced its tuition costs down to

\$15,000. For some programs, the cost was reduced additionally down to \$10,000.

For students who do live on campus, room and board is an additional \$12,800 a year. The average needs based aid package for students is \$12,739.

Academics:

SNHU's focus is on business and other degrees with an immediate practical application. The most common majors for students are Business Administration & Management, Psychology, Education, Social Sciences, and Organizational Communication.

SNHU divides its academics into seven different schools like the School of Engineering, Technology & Aeronautics and the School of Business. It also has a three year Honors Program for business majors which has a custom designed and accelerated academic experience.

SNHU also offers nearly 200 online degrees as well ranging from Accounting to Technology, which focuses on Computer Science. The Computer Science degree focuses on software engineering, information security, project management and data analysis.

Student Life:

For students who live on campus, SNHU has a vibrant student life. SNHU has a wide variety of student clubs, honor societies, Greek organizations, a student radio station and a student newspaper, The Penmen Press.

SNHU also has an athletic program and participates in the NCAA Division II as a member of the Eastern College Athletic Conference. It also participates in the North-east-10 Conference.

ROTC & Military Resources:

Southern New Hampshire University does have a Reserve Officer Training Corps for students who want to join the Army and the Air Force respectively. Additionally for students who are veterans, SNHU is ranked as a Gold level Military Friendly School, with a host of resources dedicated to helping veterans save money and make their time at SNHU a success.

Return on Investment:

Depending on the student, your return on investment will vary quite a lot. For instance, only 31% of SNHU students graduate on time. Additionally, according to Niche.com, students rate SNHU as a C+ for its academics. While 77% of students graduate with some form of debt,

this debt is similar to the national average of around \$27,000. That being said, the median starting salary for alumni is \$51,340, which is around the national average.

Notable Alumni:

- ◆ Samia Suluhu Hassan, the first female president of Tanzania
- ◆ Elaine Duke), former U.S. deputy secretary of homeland security
- ◆ Chris Tsonis, professional soccer player for the Charleston Battery
- ◆ Ron Fortier, comic book writer and creator of the Green Hornet comic books
- ◆ Peter Holland, professional hockey player for the Anaheim Ducks

Is It Worth It?

For a determined student who has a specific career goal in mind, Southern New Hampshire University may be the right choice. It offers low cost tuition, specializing in a lot of career fields that are highly lucrative. Online degrees also allow students to still work and live remotely from campus. But if you are more focused on a traditional college experience or a more liberal arts focus, SNHU may not be the choice for you. Before applying it may be helpful to ask yourself questions like:

- ◆ Do I want to attend college or do I want to start a

career immediately?

- ◆ How important is it for me to work while I am in college?
- ◆ Do I have any careers that I am sure I want to work in?



KING'S
College
LONDON



Review:

King's College, London

Established
1829

Should You Attend King's College, London?

King's College, London is one of the most prestigious schools in the United Kingdom and is a highly exclusive school. It can be a life changing experience, but is it right for you?

Costs:

For British students the cost is £9,250 (\$11,707), however this will vary by which degree a student pursues. At the moment students from the European Union are under the same fee structure, however the school reserves the right to shift this cost by year.

Quick Facts:

King's College, London, often known simply as King's or KCL, is a public research university in London, England. It was founded in 1829 and is part of the wider University of London system. It has five separate campuses across London. It has a rather large student population with an overall population of 41,000 students; 22,000 of which are undergraduates.

For Americans, King's offers spaces to 590 American students a year.

Academics:

King's College has a relatively high academic reputation. It offers 30 different subjects and 9 of those are ranked in the top 10 programs in the United Kingdom. The highest ranked academic programs are Business & Management Studies,

Psychology, Law, Linguistics, Food Science, Sociology, Dentistry, Classics & Ancient History and Biological Sciences.

Student Life:

King's College has a very robust campus life. Students live in 13 different dormitory halls across London. International students are guaranteed housing accommodations. Though it does not have sports programs in the sense that Americans will recognize, it does have over 60 sports clubs which compete in the University of London league. The school's sports teams have a long, friendly rivalry with the University College, London and the London School of Economics.

King's College also has a student union, multiple extra-curricular activity clubs, newspaper, radio station, TV station and a student run think tank, King's Think Tank.

ROTC & Military Resources:

King's College is a British school and as such does not have resources aimed at U.S military veterans or currently serving members of the U.S armed forces. However

for those currently serving in the British armed forces, it does provide some resources.

Return on Investment:

International students can expect to incur some serious costs to go to King's College. On top of the \$11,000 minimum a year, London is one of the most expensive cities in the United Kingdom. However King's is also a highly ranked university with an extremely extensive alumni network.

King's is ranked by the U.S News & World Report ranking as the 6th best global university in Europe and the 33rd best university globally. Its academic programs like the arts & humanities, biology, and neuroscience all rank internationally.

Notable Alumni:

- ◆ Mustafa Al-Bassam, software engineer and privacy activist
- ◆ Helen Beatrice Joseph, an anti-apartheid activist and member of the Order for Meritorious Service

to South Africa

- ◆ Zoe Lee, Olympic medal-winning rower
- ◆ Isabel dos Santos, Africa's richest woman and its first female billionaire
- ◆ Sheikh Meshal Abdullah Al-Jaber Al-Sabah, member of the Kuwaiti Royal Family

Is It Worth It?

For the right student, King's College, London can be an incredible experience. However its cost and the effort it takes for an American to apply and get accepted can be considerable. Some questions you should ask yourself are;

- ◆ What would I have to do to get accepted into an exclusive international school like King's College?
- ◆ Am I ready to live internationally?
- ◆ What financial costs will I have to incur by living internationally and attending a relatively expensive school?





Kaitlyn Gleeson

AI & Being *a Writer*



Kaitlyn Gleeson is a professional writer who graduated from Concordia University, Irvine with a degree in Humanities & Creative Writing. She is a Master of Fine Arts (MFA) graduate student at the University of San Francisco and a speech & debate coach.

Pathways: What trends do you, if any, see happening generally with AI & writing?

Kaitlyn Gleeson: A trend I generally have seen in the last year or so with regards to AI and writing has mostly to do with academia. I've worked in academia before when A.I. was first being introduced in the form of Chat GPT, and it was fairly common to hear of students that were using AI to write their essays in full, get extensive ideas for their essays that they would later edit, or even using AI to get answers to multiple choice exams. Overall, I've found a trend of students abandoning traditional methods of researching topic ideas and arguments for paper outlines in favor of leaning on artificial intelligence to do the work for them.

Pathways: Do you feel that it can create better writing or worse?

Kaitlyn Gleeson: I am of the opinion that artificial intelligence could never write something "better" than what a human can write. A.I., at its core, is still just a set of code, and is "trained" or built by programmers filtering literature through the programming during its creation. A.I, in both art and writing, can only take pieces of already written art or literature and rework it into something that might not be recognizable at first. However, there is a difference between imitation and inspiration, and while I have no doubt that artificial intelligence can produce some nice-sounding imitations, it will never be inspired, as the "inspiration" part of writing is drawn from the unique experience of being human.

Pathways: What is the biggest pitfall of AI to you as a writer?

Kaitlyn Gleeson: While there are some benefits to

artificial intelligence that I will admit, something that I struggle with coming to terms with is the idea of A.I. removing the “human element” out of fine arts such as writing, painting, or drawing. Artificial intelligence is a dazzling new thing that, understandably, draws a lot of attention from the public and curious minds. However, there are some things that, in the long wrong, would be hurt more than helped by the insertion of A.I. as a regular tool or practice, and the fine arts is one of those things. Literature, much like the stroke of a brush on a canvas, is unique to the writer. Only one person can tell a specific story in a specific way, as their writing is an amalgamation of their experiences as a person. The pitfall of A.I., at its core, is that it removes the “voice” of the story, and leaves only empty words on a paper.

Pathways: Do you see any potential ethical pitfalls or concerns about how AI could be applied when it comes to the future of writing?

Kaitlyn Gleeson: I think we are already seeing a few ethical pitfalls of A.I. in writing, such as students committing plagiarism or electing to abandon the research process. Part of the writing process that is so essential during one’s academic career (even in high school) is learning proper research skills and developing the ability to generate your own critical thoughts on a given subject. The introduction of A.I. to writing, in both an academic, literary, and professional sense, imposes on the process of building a good foundation for research skills and critical thinking.

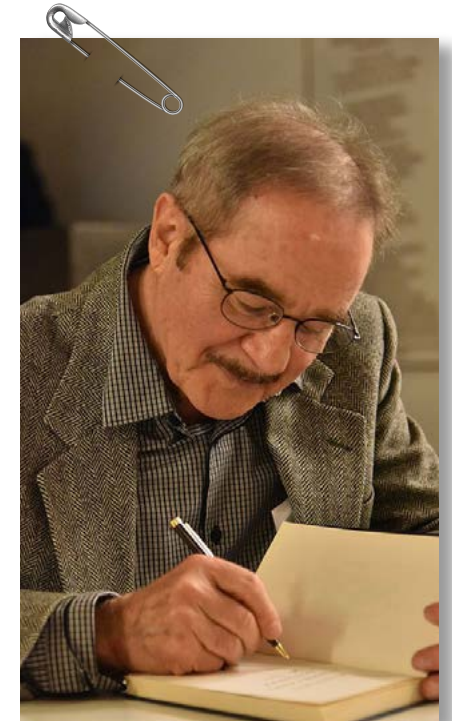
Pathways: What does human creativity or analysis mean and offer in a world where computers can rapidly create and analyze written content?

Kaitlyn Gleeson: Human creativity and analysis, in comparison with artificial intelligence, offers up, for lack of a better word, humanity

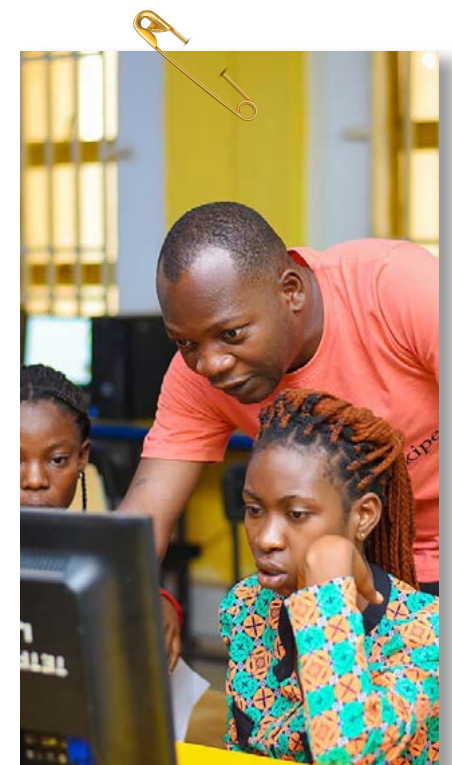
itself. Without going too far into a rabbit hole, I recently spent a few months researching poetics and the different mediums in which poetry can take form. It was during this research that I sort of realized that there are rules to the arts, and there is greater art in breaking those rules. Artificial intelligence is code. It doesn’t matter how complex that code gets, or how fast that code can operate, it will always follow its rules, it will always do as the programmer commands, and it will always replicate that which was imbued into its foundation. Creativity and human analysis are based on our ability to see past the barriers, to break the rules, to insert our own personalities and thoughts into whatever it is that we decide. Humans are constantly changing, thinking one thing is true one day and then, maybe after a long discussion with a friend, having a completely different opinion the next day. We can be told in a million ways that something that we think is wrong, and will still choose to believe it is right. To be human is to exist in contradiction, and an intelligence limited by binary code and programming, no matter how complex, could never compete with that.

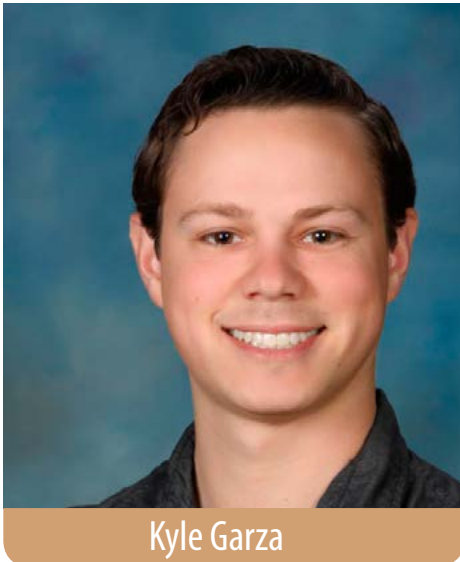
Pathways: Do you see any particular types of writing that will benefit from adoption of AI?

Kaitlyn Gleeson: When I worked in marketing, I met two different individuals who claimed to be “marketing consultants” to small businesses. These consultants charged an arm and a leg for their “services.” I found out soon after I met these individuals that all their marketing proposals, social media and advertisement text, and business analysis, was done by programs and self-writing tools. I think that if smaller businesses had access to A.I. to help them with their marketing, content writing, website writing, and other small, hard to keep track of writing necessities, it might make running and advertising their business a lot easier. It would also prevent smaller businesses from falling prey to marketing schemes that charge top dollar for minimum effort services.



Cal Kicker Jordan Kay





Kyle Garza

AI & Being a Teacher



Kyle Garza is a high school English teacher at Oaks Christian High School in Westlake Village, California. He was recently interviewed in *Pathways* to discuss education in general and how to become an English teacher. He also gave us his thoughts on AI and education.

Pathways: What trends do you see happening generally with AI & high school education?

Kyle Garza: All I can do is speak for experience. I don't use it for anything myself. I would rather do my own thinking. However, our big issue with it right now is it is just another layer of kids cheating themselves out of opportunities to think. So much of what it is able to do is to generate thoughts.

In that sense it is nothing new. We run some of our essay prompts through it. It generates live what's already on a lot of sites like SparkNotes.

We tried putting our course packet, specific stuff we teach and it's not good at it. Sometimes it does surprise us with what goes wrong. For instance Lord of the Flies, we asked for interesting quotes and then it would make stuff up.

Pathways: Do you see AI influencing how students and teachers deal with plagiarism?

Kyle Garza: The biggest concern is that it's another thing a student can get away with unless you have a program that detects AI generation. Fortunately we usually pay for a service that catches that. But it doesn't always work. There are 2-3 services and sometimes it can give you different results. We had an instance earlier this year. Ironically the writing that it generated didn't answer the prompt well and didn't sound like the student."

More and more it is putting an onus on us to do more in class writing, which is harder because there are certain kinds of essays where that does and doesn't work.

Pathways: What does learning look like in a world of machine learning?

Kyle Garza: The chief enemy of human curiosity is AI. Innate curiosity is what should drive us to learn. To know the reality of the universe. We are driven to know, we want to know reality as it is. AI is an interesting development because it short circuits our ability to know and to search. It says "Do it for me." It's used for more mundane tasks, like coding. That looks very useful on a pragmatic level. Coding is sequential, for example, and AI can do great almost assembly line work. We're losing something very human at that point. It's literally artificial, predigested intelligence, not human intelligence.

Seconds do matter and so if something can do anything that makes things quicker for you. It's great in the practical, working world. But unfortunately its being used in academia. In a field where it is less about "production" but about "becoming," that's what we're losing in education, becoming a better person.

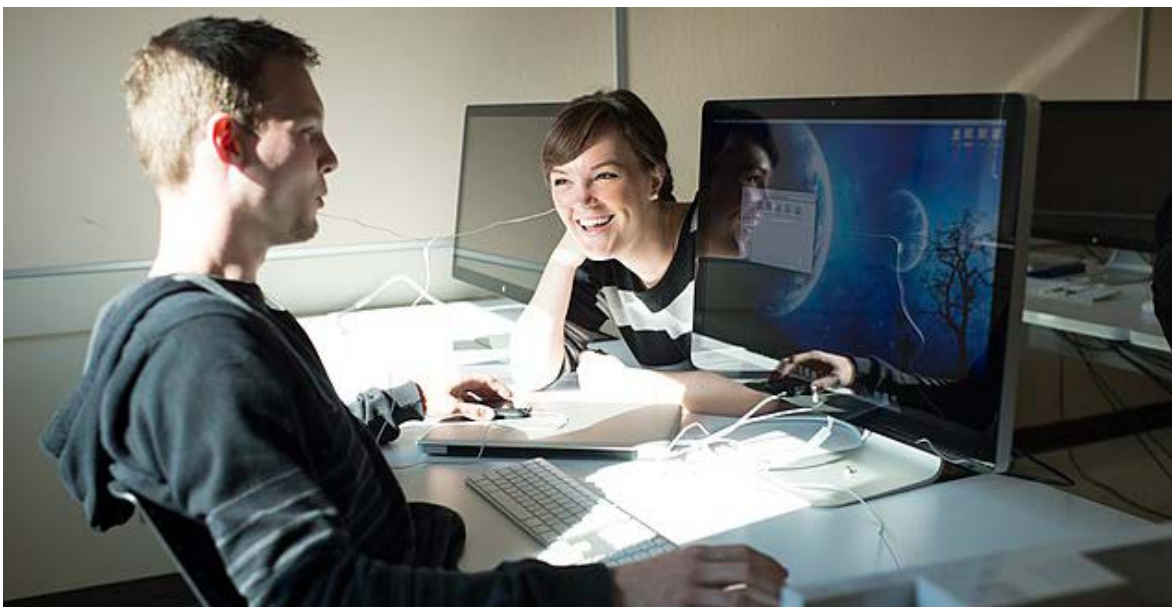
The minute you start using AI because its faster, short circuits the thinking "I don't understand this I have to come back to this"

Pathways: How would you convince a student to care?

Kyle Garza: Oh wow that's a hard one. It would depend on the student. It depends on what they want to be because you would change the analogy. I'll give you an example of the worst kind of student I have. "The business student." By that I mean the kind of kid who is purely interested

in just making money. That's all they want out of life. What I try to do is to convince them that there is a stereotype in the world, not saying this is you, but people do not like the stereotypical business people who scheme to get a dollar out of you. No one likes that person. We feel cheated by people who are like this to us. Whenever you take an opportunity to cheat a system, you're making it easier for yourself to become that person when you're older. It's this self fulfilling prophecy...but no one likes that guy.

I don't want you to define success as the highest mark possible, but rather growth. Know something today you didn't before, have a skill today you didn't have before. Humans fail and through failure get better at things. I heard someone at a conference, We should prepare our students for the road, not the road for our students.





Dr. Christa Brown, MD

AI & Being a Doctor



Dr. Christa Brown is a family medicine doctor in Sacramento, California and is affiliated with Methodist Hospital of Sacramento. She received her medical degree from University of Hawaii John A Burns School of Medicine

Pathways: What trends do you, if any, see happening generally with AI & medicine?

Dr. Christa Brown: Specifically in clinic medicine/hospital medicine, I see AI being used to augment guideline compliance as well as attempts toward enhancing physician documentation efficiency.

Pathways: Do you feel there are any major accuracy issues when it comes to diagnosis or does it generally create more accurate diagnosis and treatment?

Dr. Christa Brown: I think it depends on the type of diagnostic decisions you are asking AI to make as well as the

quality of the input into the AI. If there is an efficient, accurate input mechanism then AI can probably create a faster generation of lists of people who are in or out of guideline compliance where there is a clear set of qualification criteria for a certain medical recommendation. However, I think it will be difficult for AI to effectively consider/recognize nuanced cases, specifically cases that require watching and interpretation of human social interaction.

Pathways: What is the biggest pitfall of AI to you as a medical doctor?

Dr. Christa Brown: I think the quality of the AI diagnosis/treatment recommendations in primary care/clinic medical care will be highly dependent on nuanced inputs for AI to be a robust replacement for physicians in the clinic. Sometimes there is a nuance voice intonation or hesitancy in the way a patient answers questions that will cause me to probe further and find an important different answer that guides my workup and treatment. Unless AI can be fully trained in nuances of human interaction it will be difficult for it to seek out those answers. Further people may not want to tell a computer certain facets of their medical history which may be gradually revealed to a person they trust.

Even if the AI is simply being used to improve clinical efficiency, I think there may be consent issues if you disclose to a patient that a computer is listening to and recording/analyzing everything they say. If I have another person in the room (a medical scribe) documenting for me, the patient deserves disclosure/opportunity to decline or consent. Will we offer them the same kind of disclosure if it is just a computer listening? What kind of backup/verification will be stored? Will the conversation be recorded?

I think each field of medicine probably has unique opportunities for AI and unique pitfalls. For example, specialties with highly episodic care that are less relational and longitudinal will be less affected by relational concerns.

Pathways: Do you see any potential ethical pitfalls or concerns about how AI could be applied when it comes to equitable medical outcomes?

Dr. Christa Brown: I am concerned that if we allow AI into the intimate parts of human diagnosis and treatment, we lose the relational aspect of medicine that often encourages a physician or medical team to go above and beyond in advocating for a resource-limited patient who needs access to certain specialists or resources in the medical

system. If a person is reduced to a computer-determined collection of probabilities, likelihoods, and needs I wonder if we will lose touch with the humanity of the individual.

Further, the more we let computer intelligence into the exam room I wonder how the data collected will be used, analyzed and shared.

Pathways: What does human analysis mean and offer in a world where computers can rapidly analyze?

Dr. Christa Brown: The ability to notice and interpret nuances of human social

interaction vs clear input. Perhaps AI could overcome this if allowed to analyze minutia (pupil dilation, lack of eye contact with another person, etc.) but this would still imply having a human in the room to interact with.

Pathways: Do you see any particular fields of medicine that will benefit from the adoption of AI?

Dr. Christa Brown: I think there could be a role in many fields of medicine. I am hopeful for improved documentation efficiency and up-to-date guideline recommendations in collaboration with human relationships, evaluation and interaction.





AI & Being a Paralegal

Mary Harvill is both a substitute teacher and a paralegal. For over 34 years she has been a paralegal with experience in both federal and state court litigation in fields like civil rights law, family law, and real estate law.

Pathways: What trends do you see happening generally with AI & the legal field?

Mary Harvill: In the past year, I have seen use of AI in case law research, use of AI to locate specific text and keywords for general research (using Google).

Pathways: Do you feel there are any major issues or does it generally help paralegals perform their job?

Mary Harvill: Like many technological innovations over my 34 year career as a paralegal, I believe AI has the potential to help paralegals and attorneys perform their job. During my career, all of these tools were invented and implemented for use by attorneys, paralegals and law office support staff:

The copier: Before copiers, “dittos” or mimeograph images were used.

- ♦ Electric, self-correcting typewriters: Before this innovation, typewriters were manual and you had to use carbon paper between the sheets to make more than one copy. If you typed one letter wrong, you had to erase all the copies, including the original sheet and retype the letter.
- ♦ Stenographers: This consisted of a legal secretary writing down in what was called “shorthand” what the attorney wanted to say in a letter or pleading.
- ♦ Use of the computer. There was a word processing system called “Mag Card”, that was the first type of computer used in law offices. Legal secretaries were given hands-on training for this. Many job offers were predicated on whether or not the person had specific skills in specific word processing systems.

- ♦ Later, there was computer software. The first one widely implemented in law firms was called WordPerfect. In the early 1990’s, law firms started converting to Microsoft Word which was not as easy to navigate as was WordPerfect. In 2006, one of the federal court judges and his staff still used WordPerfect though most everyone else had moved to Word as the industry standard. That’s the type of loyal following WordPerfect had.

- ♦ The Internet. Google and Wikipedia were also invented as research tools. Law firms and counties began creating webpages as a marketing tool.

Pathways: Do you see any particular legal field where AI could be particularly useful in research or writing?

Mary Harvill: Not at this time.

Pathways: What does it mean to assist lawyers with paralegal knowledge in a world where computers can rapidly analyze?

A paralegal still has to use their brain, as does a lawyer. Computers are a tool in the process of communications and analysis. Computers are told what to think and how to process information. They do not seem to be able to think outside of their box even with refinements. Humans are better suited to creativity, thinking outside the box and not thinking in a linear fashion.

AI & Being a Data Analyst



Coding and data analysis are one of the fastest growing sectors of the economy and are increasingly critical to a wide variety of industries. It is also a sector that has changed dramatically due to artificial intelligence and machine learning. We asked two professional data analysts and coders, Hasan Mohammad Tanzir and Manisha Agrawal, to see where this field is headed when it comes to AI.

Hasan Mohammad Tanzir is a professional coder and data analyst with an academic background in computer science and engineering from BRAC University. He currently works as a senior coding instructor at Codingal.

Pathways: What trends do you see happening generally with AI & data analysis?

Hasan Mohammad Tanzir: The most common trend I see in data analysis and AI is the whole automation prospect of it. Starting from code generation to extracting valuable insights. Even creating synthetic datasets also. For example, previously if we had to deal with huge amounts of data, to purify it or modify the data to a point where it's usable to us, we would have to think about the code and apply it to see if it worked or not. Nowadays you just have to tell the AI how you want your dataset to look like and you will get the code that

will generate it for you. This is the modification perspective of it. For generating data I have recently worked on a chatbot project. Where the dataset didn't have enough context and conversations. So I just passed a couple of data as an example and told the AI the whole concept of the project. The AI gave me 200 plus conversations.

Pathways: Do you feel there are any major accuracy issues or does it generally create more accurate analysis?

Hasan Mohammad Tanzir: In one sentence, AI is not good at mathematical calculations yet. The basics are also incorrect sometimes. But when it comes to sentiment analysis, in general pattern recognition, the AI can do it way faster than a normal human being. Although post supervision is always necessary.

Pathways: What is the biggest pitfall of AI to you as a data analyst?

Hasan Mohammad Tanzir: While automation can enhance efficiency, there's a risk of overreliance on AI tools without critically evaluating their outputs. Data analysts need to maintain a balance, combining the strengths of AI with human expertise.

Pathways: What does human analysis mean and offer in a world where computers can rapidly analyze?

Hasan Mohammad Tanzir: Human analysis is one word mandatory in this field of work. We can not fully rely on AI for what it does ever so rapidly. AI has all of its knowledge and information, at the end it's just guessing



words after words. It does not have any feeling. But it did make work a lot faster and optimized the repetitive tasks wonderfully. I think of AI as my perfect Jarvis at work. A companion. Not more than that.

Pathways: Do you see any particular sectors that will benefit from adoption of AI in their data analysis?

Hasan Mohammad Tanzir: Marketing, advertisements, education, manufacturing. These sectors use a massive amount of data that has to be processed everyday. Using AI and perfectly implementing it with a balance of human intervention could largely benefit organizations in these sectors. I have personally helped integrate AI in

marketing sectors and most of the cases they were happy with what they could achieve from it.

Manisha Agrawal is a professional data analyst with a background in healthcare information technology. She has an academic background in computer science from DOEACC and is a co-founder of DreamSoft4u, a software development company specializing in healthcare IT.

Pathways: What trends do you see happening generally with AI & data analysis?

Manisha Agrawal: I would isolate a few major trends:

- ◆ Continual advancements in machine learning algorithms, particularly deep learning, allowing for

more complex analysis and predictions.

- ◆ Increased emphasis on responsible AI, ethics, and fairness in data analysis.
- ◆ Integration of AI with other technologies like information technology (IT), leading to more data sources and richer insights.
- ◆ Growing utilization of natural language processing (NLP) and computer vision for unstructured data analysis.
- ◆ Development of AI-powered automation tools for data preparation and preprocessing.

Pathways: Do you feel there are any major accuracy issues or does it generally create more accurate analysis?

Manisha Agrawal: While AI can enhance accuracy in many cases, it's not immune to biases in data, which can lead to skewed or inaccurate results. Accuracy heavily depends on the quality, relevance, and representativeness of the data used for training AI models. Interpretability and explainability of AI-generated insights might pose challenges, affecting the perceived accuracy.

Pathways: What is the biggest pitfall of AI to you as a data analyst?

Manisha Agrawal: Overreliance on AI-generated insights without human validation or understanding can lead to blind trust in the outputs, potentially missing nuances

or contextual factors. Another big pitfall is the lack of interpretability in some AI models that might hinder understanding the “why” behind predictions or analysis, impacting decision-making.

Pathways: What does human analysis mean and offer in a world where computers can rapidly analyze?

Manisha Agrawal: Human analysis involves critical thinking, domain expertise, and contextual understanding that AI might lack. It provides the ability to question assumptions, consider broader implications, and adapt to new scenarios. Also humans can validate, contextualize, and interpret the results provided by AI, ensuring that decisions align with ethical, legal, and moral considerations.

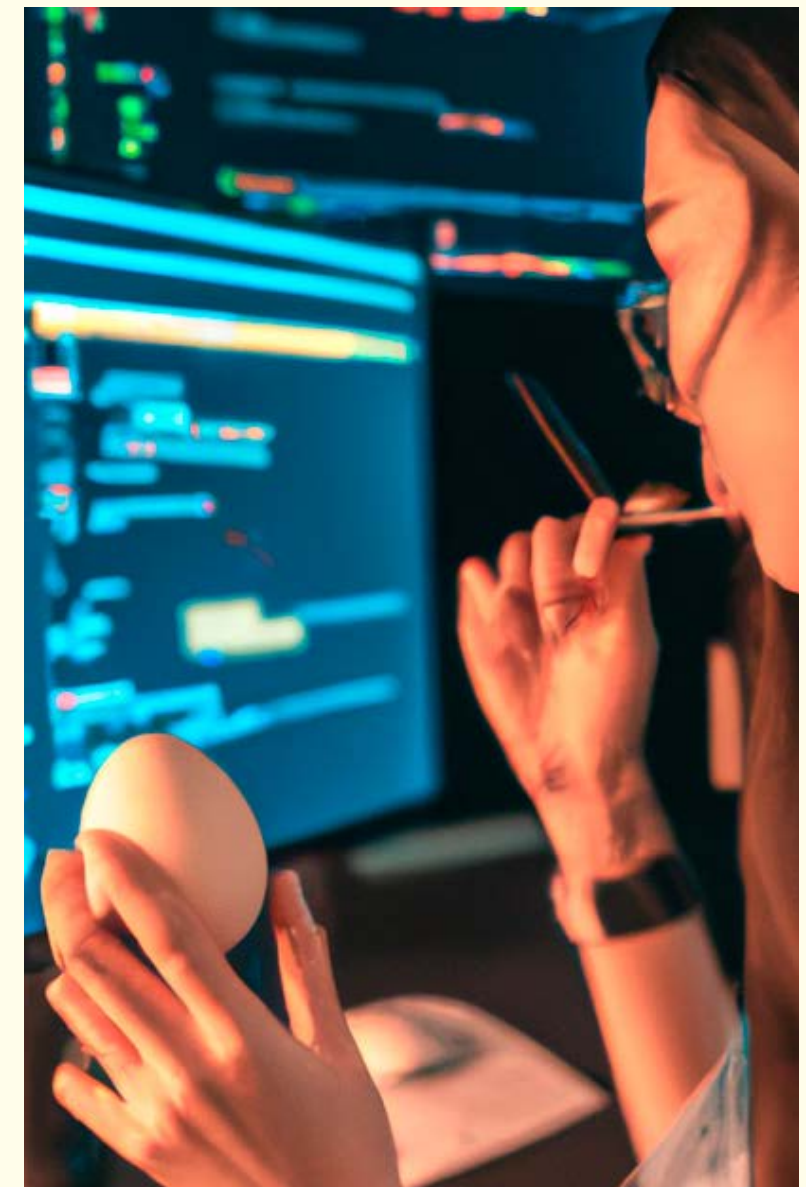
Pathways: Do you see any particular sectors that will benefit from adoption of AI in their data analysis?

Manisha Agrawal: There's a lot of sectors that will benefit:

- ◆ Healthcare: AI can improve diagnostics, drug discovery, and personalized medicine by analyzing vast amounts of medical data.
- ◆ Finance: AI aids in fraud detection, risk assessment, algorithmic trading, and customer service in the financial sector.
- ◆ Retail & Ecommerce: Utilizing AI for customer behavior analysis, demand forecasting, inventory

management, and personalized recommendations.

- ◆ Manufacturing: AI optimizes production processes, predictive maintenance, quality control, and supply chain management.



What does ChaptGPT Think of AI?



An issue on how to best navigate AI would not be complete without interviewing ChatGPT, which stands for a chat generative pre-trained transformer. ChatGPT is a chatbot that was developed by OpenAI and works off of a large language model. It has near immediate replies to question and uses context to build a conversation with a user. We asked ChatGPT about AI and education. ChatGPT's answers have been edited down for ease of reading.

Pathways: How should high school students and college students use AI?

ChatGPT: High school and college students can benefit from using AI in various ways to enhance their learning, productivity, and overall skill development. Here are some suggestions on how students can incorporate AI into their academic and personal lives:

- ◆ **Research and Information Retrieval:** Use AI-powered search engines and databases to find relevant and up-to-date information for research projects and assignments.
- ◆ **Study Assistance:** Explore AI-based educational tools and apps that provide personalized learning experiences, adaptive tutoring, and homework help.
- ◆ **Language Learning:** Utilize AI language learning platforms for personalized language practice, pronunciation feedback, and interactive lessons.
- ◆ **Coding and Programming:** Leverage AI tools to assist with coding and programming tasks, such as code completion suggestions and debugging assistance.

Virtual Assistants: Employ virtual assistants like Siri, Google Assistant, or Alexa for quick information retrieval, setting reminders, and managing schedules.

- ◆ **Creative Writing and Content Creation:** Experiment with AI tools that generate creative content, such as automated writing assistants or AI-driven art and design tools.
- ◆ **Time Management:** Use AI-powered time management apps to schedule tasks, set priorities, and optimize study sessions.

It's important for students to approach AI with curiosity, critical thinking, and an awareness of its implications. Integrating AI into their education can open up new opportunities and prepare them for the evolving landscape of technology and innovation.

ChatGPT can make mistakes. Consider checking important information.

Pathways: How can students avoid ethics concerns while using AI at school?

ChatGPT: To avoid ethical problems when using AI, students should be mindful of the following considerations:

- ◆ **Understand Bias and Fairness:** Be aware of bias in AI algorithms and models. Strive to choose and use tools that prioritize fairness and inclusivity.



- ◆ **Question Automation Decisions:** Don't blindly accept AI-generated outputs. Question and critically assess the decisions made by AI systems to ensure they align with ethical standards.
- ◆ **Respect Privacy:** When working with AI tools that involve personal data, prioritize privacy. Understand the data privacy policies of the tools you use and seek consent when necessary.
- ◆ **Verify Sources of Data:** Ensure that the data used to train AI models is diverse, representative, and free from biases. Be cautious about relying on datasets that may perpetuate stereotypes or reinforce biases.
- ◆ **Advocate for Responsible AI Practices:** Encourage the adoption of responsible AI practices within your academic institution and among your peers. Promote discussions about the ethical implications of AI.

By incorporating these considerations into their use of AI, students can contribute to the responsible and ethical development and application of AI technologies. Awareness and proactiveness are key to ensuring that AI is used in ways that benefit society while minimizing potential ethical risks.

Pathways: Does AI make students more or less likely to cheat?

ChatGPT: The impact of AI on academic honesty and cheating is a complex and evolving topic. Here are some considerations:

AI as a Tool for Cheating:

- 1. Essay and Assignment Generation:** AI tools capable of generating human-like text can be used to create essays or assignments, potentially enabling plagiarism.
- 2. Automated Answers:** Some students might use AI-driven platforms to generate answers for assignments or exams.
- 3. Online Test Assistance:** AI chatbots or virtual assistants could be used to help students cheat during online exams.

AI as a Deterrent to Cheating:

- 1. Plagiarism Detection Tools:** Educational institutions often use AI-powered plagiarism detection tools to identify instances of copied content.
- 2. Online Proctoring:** AI-based proctoring tools can monitor students during online exams to detect suspicious behavior, ensuring exam integrity.

Conclusion:

The impact of AI on cheating depends on various factors, including the intent of the user, the specific tools available, and the measures taken by educational institutions. While AI can be misused for cheating, it also offers opportunities to enhance education, detect plagiarism, and ensure academic integrity. It's essential for educators and institutions to stay informed about AI advancements, implement preventive measures, and foster a culture of academic honesty. Additionally, educating students on the ethical use of technology can contribute to a responsible and transparent academic environment.

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Chat GPT Content Detector - Detect open Ai text

Enter text to check for AI and ChatGPT content (min 250 characters)

Human
written

Ai/ GPT
Generated





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