For students of

KEAN UNIVERSITY

AI-U/1.0
Fall 2024

A student guide to navigating college in the artificial intelligence era

Connie Book
President, Elon University

"As AI begins to influence teaching and learning, as well as many operations of colleges and universities, you need a road map to help navigate these changes. This guide was written from the student perspective and includes practical advice on using AI responsibly while in college and preparing for the AI future."

C. Edward Watson
Vice President for Digital Innovation, American Association of Colleges and Universities (AAC&U)

"The world of learning and the world of work are both changing at a dramatic rate as a result of AI, so much so that using AI effectively has quickly become essential learning for college students. This guide is indispensable for students as they travel along their AI learning journey."

Paul LeBlanc
Former president, Southern New Hampshire University

"I am encouraged that many colleges are embracing the concept of human-centered AI. This important student guide illustrates that approach by combining common sense advice about using AI with guidance on developing strong personal relationships and recognizing your own unique knowledge, skills and creativity."

Neeli Bendapudi
President, The Pennsylvania State University

"AI poses new challenges for higher education but also represents profound opportunities to enhance our ability to learn, educate, conduct research and serve communities in ways that have never been possible. As students, scholars and innovators, we must leverage these new tools ethically and effectively to continue realizing the vital role of higher education in modern society."

Adam Clayton Powell III
Executive director, University of Southern California Cybersecurity Initiative

"In the 21st century, knowledge of AI tools is not just useful: It is essential for mastering studies in colleges and universities, for navigating job opportunities in corporations and government, for creating startups in fields ranging from technology and finance to music and design, and for life-long learning, growth and fulfillment."

Ryan McCurdy
Senior vice president and president, Lenovo North America

"At Lenovo, we applaud Elon University for empowering students to step into the future with confidence and curiosity as you prepare for AI-driven careers. With the proper framework, you can harness the power of artificial intelligence to carve your path in a world where technology is not just a tool, but an enabler of innovation, collaboration and creativity. Embrace the learning journey. The skills you cultivate today will be the foundation of tomorrow's workplace."

Minds + Machines:
Humans and AI Working Together

Humanity is building exciting new partnerships with technology in the artificial intelligence age. Careers and work are rapidly being transformed and many of the jobs of tomorrow have not yet been invented.

> *"AI won't take your job. It's someone using AI who will take your job."*
>
> Richard Baldwin, professor of international economics, International Institute for Management Development

Make it your goal to become skilled in using AI comfortably, effectively, safely and ethically. Learn AI's capabilities and limitations. Understand when and how it can augment your work and when your unique human expertise and creativity is invaluable.

There is no doubt that AI will continue to evolve and impact many aspects of our lives. The changes ahead are hard to predict. This guide will help you get the most out of your college experience as you prepare for the revolution ahead.

The essential AI "how-to" manual

Ground rules for your classes

Every class has a **syllabus** that tells you about the plan for learning and the professor's expectations. In most courses, professors will also include rules for using AI. Read the syllabus carefully and if AI isn't mentioned, ask the professor about it right away.

Expect that AI policies will vary between professors, courses and even by projects and class assignments. **Some faculty members will encourage or even require you to use AI, while others will prohibit it.** Those decisions are based on the learning goals for the course. Keep track of the policies for each course and assignment so you don't get confused.

Apply the highest ethical standards when using AI

Originality: Ensure all work submitted is your own, representing your unique voice and ideas. When permitted, you can use AI tools for help but not to do the work for you, unless your professor says it's okay to use AI in a specific way.

Acknowledgment and attribution: Follow your professors' and your institution's rules for acknowledging or citing AI use. If you're uncertain, ask about it. The APA and MLA both provide guidelines for citing generative AI work.

Data security and safety: Any information you share with an AI tool is no longer private and may be used in ways you can't control. Guard your data vigilantly – never share sensitive, personal or confidential information about yourself, others or your organization with AI systems.

Make sure you can answer "yes" to these questions

Before you start

❏ My school and my professor allow the use of the AI tools I'm considering for this assignment

❏ I clearly understand when and how I can use AI for this assignment

Doing the work

❏ I am using my own thoughts, words and tone of voice

❏ I have checked sources generated by AI and properly cited any facts, statistics or quotes

❏ I have critically analyzed the AI output and identified any false, biased or harmful information

❏ I have documented where and how I used AI and cited that use according to my professor's expectations

❏ I have not used confidential, protected or copyrighted information

When the assignment is complete

❏ I can explain my findings and demonstrate full understanding without the aid of AI

❏ I can prove what sources I used and how I verified the information

Some ways you can use AI

If AI is allowed

● **Writing assistance:** Use AI at discrete parts of your writing process, for example, to brainstorm or generate ideas, help you think about organization, adjust your writing style to suit your audience and purpose, and to check sentence clarity, grammar and citations. Always remain the primary author of your work.

● **Creative assistance:** AI tools can spark your imagination in production of art, graphic design, music, performing arts and other creative expressions. Be sure to credit creators of the original works.

● **Study assistance:** Use AI tools as a tutor partner; ask it to create study notes, challenge you with quizzes and test your understanding. Make sure you critically evaluate the accuracy of these materials as you study.

● **Research and information gathering:** Ask AI to distill or explain complex concepts in language you can understand. Always critically evaluate AI output to ensure the information is credible and relevant. Read original sources to verify facts and gain a deeper understanding.

● **Data analysis and visualization:** Use AI to interpret and summarize data sets and create data visualizations. Always verify the work and make sure you are able to explain and justify the results.

The AI toolbox

The **BIG 6** Generative AI tools (mid-2024)

Chat GPT (Open AI) **Gemini** (Google) **Copilot** (Microsoft)

Claude (Anthropic) **Perplexity AI** **Meta AI**

A selection of top tools for image generation

- » Image Creator from Microsoft Designer
- » DALL-E by OpenAI
- » Adobe Firefly
- » ImageFX by Google
- » Canva.com (presentation and design)

A selection of top productivity tools for students

- » Grammarly (writing assistant)
- » QuillBot (writing assistant)
- » Turbolearn.ai (custom study tools, practice tests, flashcards)
- » Caktus AI (study assistant)
- » Wolfram Alpha (math learning assistant)
- » Microsoft OneNote and otter.ai (notetaking)
- » elicit.com, scite.ai and notebooklm.google (research)

Use your school's resources

- » Software subscriptions and custom AI systems
- » AI resources offered by academic support departments, such as the library, or tutoring, writing or technology centers
- » Career services advising and resources
- » Academic advisors or guidance counselors
- » Alumni network for mentorship, internships and jobs

Skill-up on prompts

How can I help you today?
Give AI a try!

When you ask questions of one of the major generative AI tools, you'll learn how to have conversations similar to human interactions and then critique the results carefully. These back-and-forth exchanges will produce the best results.

Here are some prompts to get you started:

» What is artificial intelligence?

» What makes a good AI prompt?

» I am a college student. Please suggest the best ways for me to use AI tools, as well as their advantages and disadvantages.

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5 guidelines for a good prompt

1. Use correct spelling and grammar. Write complete sentences.

2. Be clear, specific and detailed about your request to the AI.

3. Provide context and perspective to focus the AI output.

4. Break down complex tasks into multiple short prompts.

5. Specify the desired format, tone and style of the output.

Basic prompt formula

Declare a **[ROLE]**. Give **[CONTEXT]**. Create a **[TASK]** and specify **[FORMAT]**.

[Example]

You are a **college student. You are taking a political science course and writing a 1,500-word essay on the topic of disinformation in modern societies**. Please **produce a potential outline for the essay**, **suggesting key points to cover and possible sources to research. Cite the sources for your response.**

Detailed prompts produce better responses

POOR PROMPT

Give me an idea for a service project.

BETTER PROMPT

Reply as if you're a student assigned to work with your class members on a community project to help homeless people. What ideas do you have?

EFFECTIVE PROMPT

Reply as if you're a student in a sociology class. You have been assigned to work with your class members on a community project to help homeless people. Suggest three practical projects the group could complete in nine weeks and describe what the group would learn in the process.

Try meta-prompting

You can design higher-level prompts that guide the AI in how it generates answers and meets your needs.

[Examples]

Suggest some prompts for me to use to ask you about the concepts of misinformation and its impact on society.

I have some questions about cell biology. Please start with a brief, straightforward explanation suitable for beginners. Follow up with a more detailed explanation and provide real-world examples to illustrate key points. Encourage me to ask follow-up questions and challenge me with questions to test my understanding.

I am going to provide a series of scenarios about the ways AI may impact society in the future. For each scenario, please provide three different perspectives: optimistic, pessimistic and neutral.

⚠ Generative AI concerns

Truth & Accuracy

Hallucinations
Generative AI can produce inaccurate, misleading or completely false information using a confident voice.

Bias
Generative AI can produce output with subtle or blatant biases because of programming and the source training data.

Mediocre quality
Generative AI struggles with context, deeper meanings or emotional tone. Depending on its training data, the output can seem bland or uninspired. Newer AI models are often far superior to older models.

Ethics & Rights

Intellectual property
Generative AI can be trained on copyrighted material and intellectual property used without consent.

No accountability
Generative AI sources are often kept opaque. Private information you input may be shared with others without your knowledge or permission.

Lack of values
Generative AI programming often doesn't fully consider the consequences or damages that may result from its use. Guardrails for AI systems are still in development.

Tech Issues

Not current
Some Generative AIs do not capture up-to-date news and information, so their output can be outdated.

Resource hungry
AI models are very expensive to develop and the massive power consumption to train them and respond to queries can be bad for the environment.
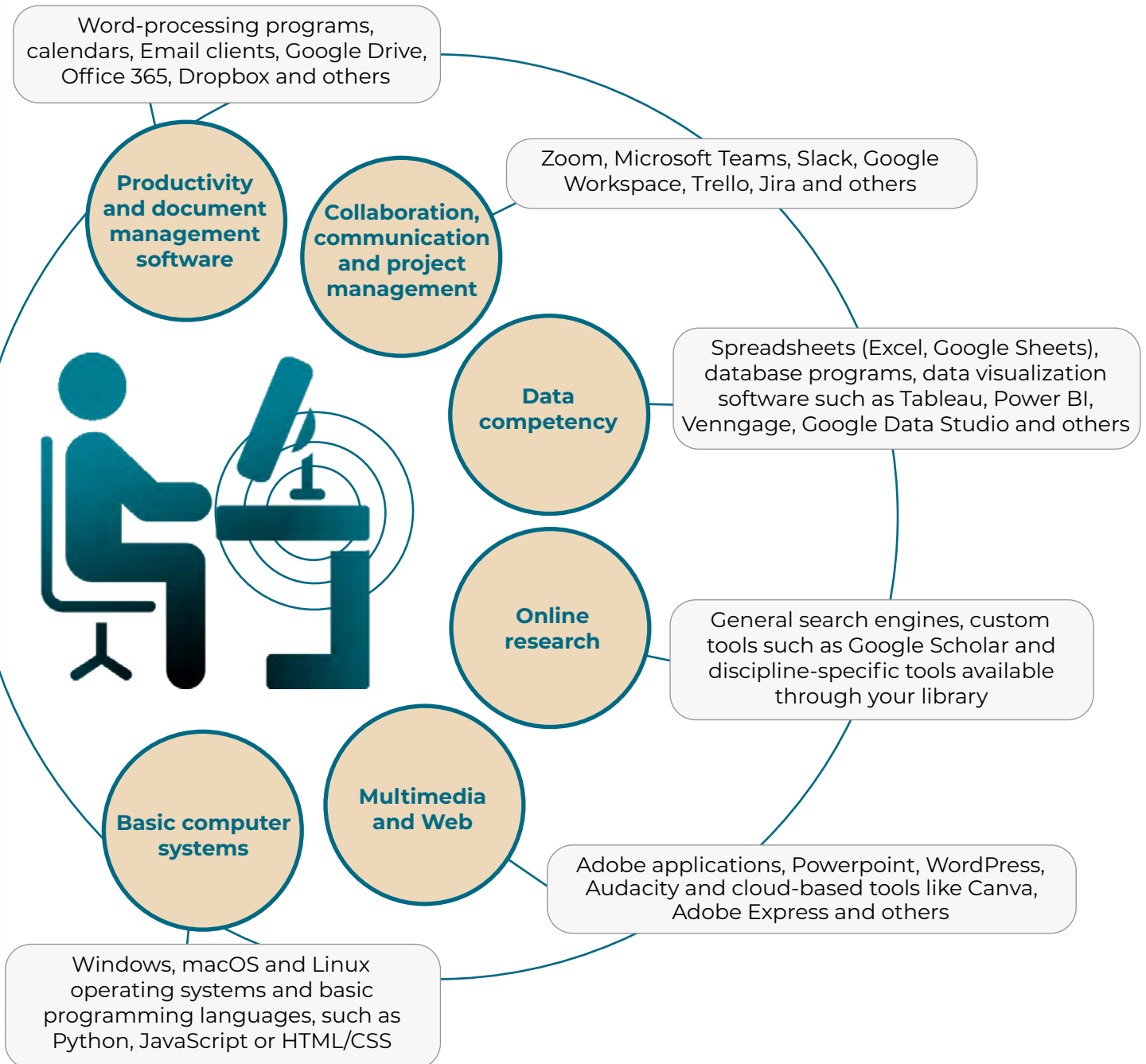
Security risks
AI tools developed by individuals or small operations may not have adequate safeguards to protect privacy and block malware.

Based on a model published by Visual Capitalist
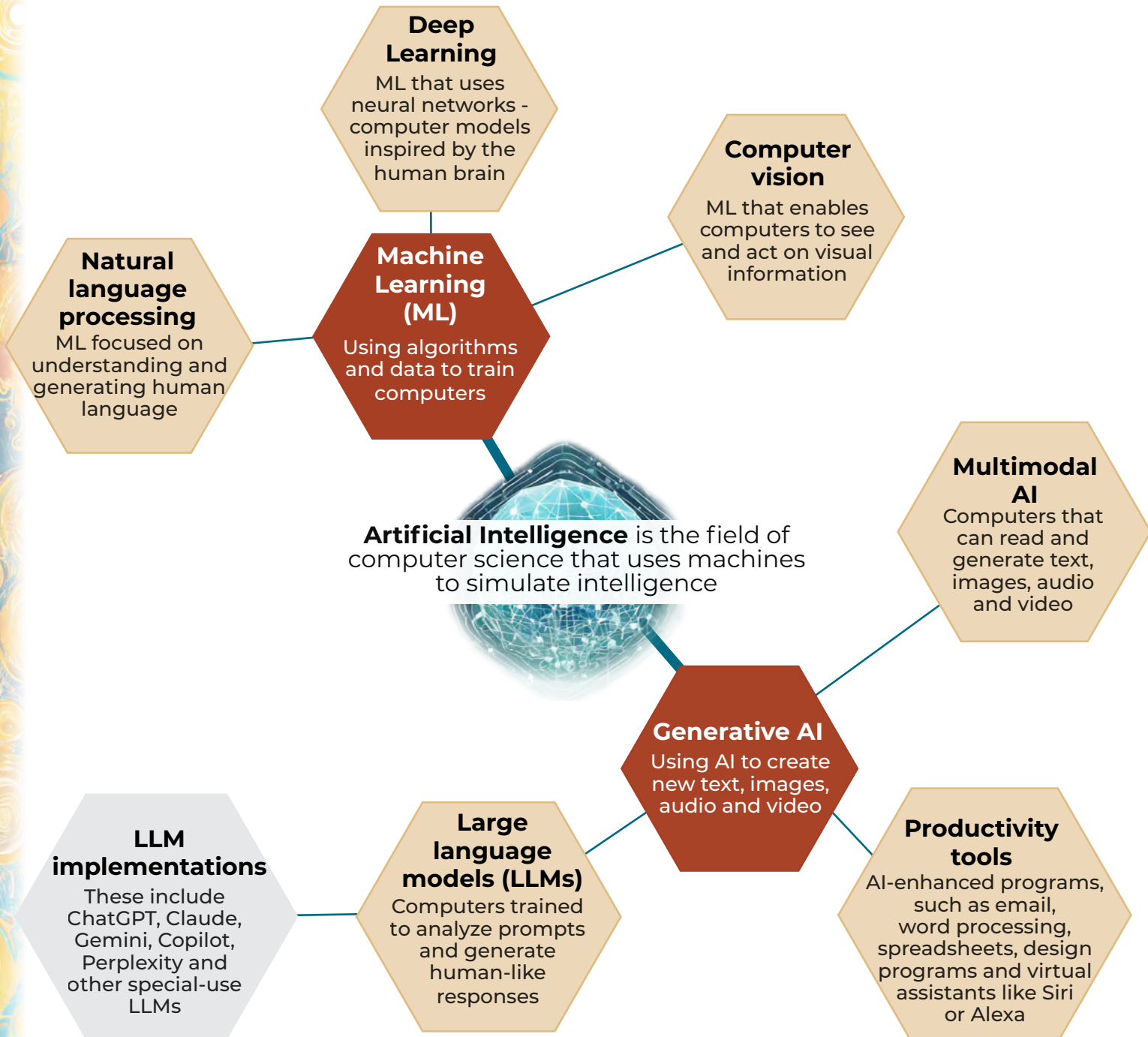
Essential tech skills

No matter what you study, you need to be skilled in current technologies, which may be offered free or at reduced cost at your school. New AI features are being infused into popular software you use every day, making it more user-friendly and powerful.

Word-processing programs, calendars, Email clients, Google Drive, Office 365, Dropbox and others

Productivity and document management software

Collaboration, communication and project management

Zoom, Microsoft Teams, Slack, Google Workspace, Trello, Jira and others

Data competency

Spreadsheets (Excel, Google Sheets), database programs, data visualization software such as Tableau, Power BI, Venngage, Google Data Studio and others

Online research

General search engines, custom tools such as Google Scholar and discipline-specific tools available through your library

Basic computer systems

Multimedia and Web

Adobe applications, Powerpoint, WordPress, Audacity and cloud-based tools like Canva, Adobe Express and others

Windows, macOS and Linux operating systems and basic programming languages, such as Python, JavaScript or HTML/CSS

KNOW THE BASICS

AI terminology

AI tools are now everywhere and many people may interact with them daily without even realizing it. In this environment, it is important to have basic knowledge of how AI tools function and understand various AI terms and acronyms.

Deep Learning
ML that uses neural networks - computer models inspired by the human brain

Computer vision
ML that enables computers to see and act on visual information

Natural language processing
ML focused on understanding and generating human language

Machine Learning (ML)
Using algorithms and data to train computers

Artificial Intelligence is the field of computer science that uses machines to simulate intelligence

Multimodal AI
Computers that can read and generate text, images, audio and video

Generative AI
Using AI to create new text, images, audio and video

LLM implementations
These include ChatGPT, Claude, Gemini, Copilot, Perplexity and other special-use LLMs

Large language models (LLMs)
Computers trained to analyze prompts and generate human-like responses

Productivity tools
AI-enhanced programs, such as email, word processing, spreadsheets, design programs and virtual assistants like Siri or Alexa

Beyond your classes

AI can be a valuable assistant in your life. You can tap into it for help throughout your college experience. The list of uses is endless, but here are a few examples:

» **Set up a calendar** that organizes your schedule.

» **Create a healthy living plan**, including an exercise schedule, tips for high-quality sleep, easy menus for nutritious meals and ways to avoid stress.

» **Help you** evaluate products or services you wish to purchase.

» **Create itineraries** for study abroad experiences and time away from campus.

» **Pursue an independent research project**, generating ideas, conducting a literature review, running simulations and critiquing your findings.

» **Plan activities for your student organization**, such as service-learning or social events to engage group members.

» **Dig into social and political issues** to help you consider many perspectives.

» **Find films, TV programs, books, music and games** that fit your interests.

Trust people first

While it may be tempting to rely on AI in many aspects of your life, you should always turn to trusted family, friends, faculty, mentors, counselors, support groups or professionals for advice about issues such as:

» Difficulties with or worries over your physical health, illnesses

» Mental health questions and issues, including personal crises, emotional distress

» Complex relationship issues

» Spiritual and faith questions

» Personal legal and financial matters (never share any bank account information, passwords or other sensitive information online)

» Personal and family dilemmas, disappointments or deaths

» Important life decisions and stressors, such as career choices, your responsibilities to those in your life, struggles with addiction, and so on

Plan your academic journey

Taking many courses in the **liberal arts and sciences** sets the stage for lifelong learning. You will develop intellectual skills and a variety of perspectives that will help you leverage the power of AI, asking informed questions and critically analyzing AI outputs.

Classes in many disciplines will help you develop skills and knowledge in:

» Critical thinking, deep analysis and curiosity

» Creativity, originality and artistic expression

» Cultural and social understanding, human relationships, empathy and compassion

» Ethics and philosophy

» Communication and collaboration

» Setting priorities, making complex decisions, weighing consequences

» Conflict resolution

Examples of subjects to explore

» Philosophy and ethics

» Creative writing and literature

» Communications and rhetoric

» Economics, business and marketing

» Cognitive science and psychology

» Sociology, history, geography, anthropology, political science

» Neuroscience and biological sciences

» Physical sciences and mathematics

» Visual and performing arts

» Gender and ethnic studies

People who can **navigate the intersections between knowledge, technology and the human experience** will be prepared for success in the AI age.

Prepare for your AI-infused career

Whether your first job is with an organization that is using AI technologies, or one that needs your help in making the AI transition, your AI skills will be a big asset. In the future, you may be assessed on your ability to effectively use AI tools and you may work on a team that includes AI avatars. Preparing yourself with these skills increases your career readiness in an uncertain job landscape.

AI skills are a priority for employers

The **2024 Work Trend Index Annual Report** from Microsoft and LinkedIn, surveyed 31,000 knowledge workers, business leaders and decision-makers in 31 countries in February-March 2024.

66%
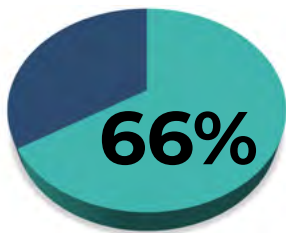
66% of leaders would not hire someone without AI skills

77%
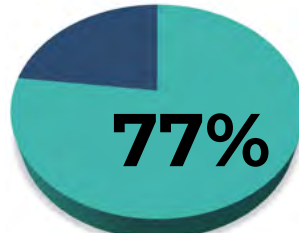
77% of leaders say early-in-career talent will get greater responsibilities due to AI

71%
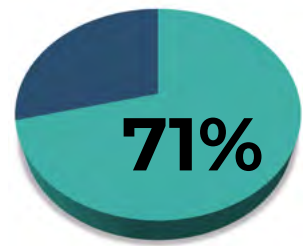
71% of leaders are more likely to hire a less experienced candidate with AI skills than a more experienced one without them

» **76%** of people say they need AI skills to remain competitive in the job market

» **69%** say AI can help get them promoted faster, and even more (**79%**) say AI skills will broaden their job opportunities

» **75%** of knowledge workers use AI at work today

AI, change and your future

AI is being interwoven into human environments and the changes are impacting everyone. Embrace a mindset of lifelong learning and adaptability to keep pace with technology, and maintain a priority on close human relationships.

Develop an experiential learning plan in school...

» Read tech news, enroll in online courses about AI and seek certifications.

» Work with your professors, mentors and career services advisors to find internships and jobs that use AI in the workplace.

» Attend industry conferences, workshops and webinars to gain new insights and network with professionals.

» Participate in real-world projects, student organizations and volunteer work that help you develop empathy, cultural awareness, teamwork, problem-solving and leadership skills.

» Prioritize getting out in the world, away from screens. Build strong relationships and develop your confidence in real-world, in-person social situations.

And after graduation...

» Continue to read about AI and tech news, enroll in useful online courses and stay current with advances.

» Take advantage of training programs and professional development opportunities provided by your employer.

» Pursue a graduate degree, certificate programs or non-credentialed training resources to keep expanding your skills and knowledge.

» Don't allow yourself to get complacent. Jobs in your field may be completely transformed in just a few years. Become the indispensable, tech-savvy person on your team. Understand and prepare for the changes taking place.

» Continue to develop your human talents and abilities - essential assets in the AI era.

Your AI-powered career search

Today's job market is AI-driven. Digital systems are being used by both employers and job applicants. Get in the game by understanding how it all works.

How some employers are using AI to search for talent:

» Screening resumés for keywords and assessing applicants' experiences, "fit" and performance potential

» Searching job boards and social media sites to evaluate candidates and find those whose online profiles are the best match for positions

» Conducting initial interviews of job candidates and answering their questions about job openings

» Analyzing applicants' facial expressions, tone of voice and body language in video interviews

» Ensuring that applicants' submissions are anonymized to guard against bias in recruitment

You can use AI to succeed

» Customize your resumé and cover letter for each job opening, including keywords and other language to make your match for the jobs clear to the AI screening systems

» Use a Word document with simple fonts instead of a PDF for your resumé and application letters; some applicant tracking systems struggle with parsing PDFs

» Generate a list of likely interview questions you may be asked, along with guidance for good answers that demonstrate your skills and talents

» To attract the attention of AI-driven recruitment search engines, create a LinkedIn profile with extensive details about your skills and experiences

» Use mock interview tools to simulate real interview scenarios and get coaching on physical behaviors that will perform well in AI analysis

Remember to combine AI strategies with human-to-human connections. Many jobs are won through smart networking, personal connections or even chance encounters with professionals at events.

How will AI change how we learn in the classroom in the future?

While the role of teachers and mentors will remain central in fostering critical thinking, creativity and student development, many believe AI can be an asset for classroom learning. AI can create custom curricula and tutoring plans designed for individual students' needs and pace. These tools can also help identify students who need additional support or enrichment. AI can provide fast feedback on assignments, freeing up time for professors to focus on higher-level instruction and one-on-one interactions with students. Specialized AI tools may change instruction methods in math and science labs and enable simulations in many different disciplines.

Where is the line between using AI to generate ideas and cheating?

The line depends on how AI is used and the rules set by faculty members. Generally, using AI to brainstorm or explore concepts isn't cheating if a student uses those ideas to inspire their original work. Submitting AI-generated content as one's own work without significant modification and proper attribution of sources is cheating. Be honest and open. Disclose AI use as required and be ready to demonstrate your own understanding and skills. If you are unsure about the guidelines on acceptable AI use, ask questions. The goal of education is learning. You should use AI as a tool to enhance your understanding and skills, not to bypass or shortcut the learning process.

What will the speed of change in AI be like going forward – will it alter everything?

Most experts predict the rate of AI development will remain high. Expect to see continued improvements in language models, new ways to interact with AI by voice and video, and AI systems customized for specific applications. Major advances are expected in healthcare, education, scientific research, business operations and more. However, AI may not "change everything" in the next few years. The speed of public adoption of AI, the cost of creating new AI systems, government regulation and business factors will influence the rate of AI's evolution.

What types of jobs are most at risk of being automated by AI?

Jobs most at risk of AI automation tend to be those involving routine tasks, such as data entry, basic administrative work and customer service. Many aspects of bookkeeping, accounting and financial analysis will be impacted by AI. Repetitive assembly line jobs continue to be at risk. Other fields that may face disruption include basic legal work (document review, contract analysis), journalism and creative work like graphic design and content creation. As AI advances, the landscape of jobs will evolve. While some jobs change or are eliminated, new ones will emerge. People who adapt to AI will be best positioned to succeed in their careers.

If we rely on AI for everything, will that diminish our critical thinking and creative skills?

Overreliance on AI could diminish your critical thinking and creativity, but it's not an inevitable outcome. The key lies in how you integrate AI into your life and your education. AI can handle routine tasks and provide quick information, allowing you to focus on developing higher-order intellectual skills. However, if you use AI as a crutch rather than as a tool, your ability to use your own critical thinking and creative skills may decline. Think of the old adage "use it or lose it." Consider AI as an assistant rather than a shortcut. Prioritize your own, original thinking, hands-on problem-solving and creative expression.

7 essential principles

1 **Know and follow your school's rules**

Your institution, its departments and individual faculty members have established AI policies and expectations designed to optimize your learning and growth. Understand these policies and be aware that they may change over time. If you're uncertain, ask questions.

2 **Learn about AI**

Everyone's future professional and personal success will be influenced by AI systems. Learn how they work. Understand their strengths and weaknesses. Ask questions, be curious, try things, share what you know and learn from others.

3 **Do the right thing**

Learn to use AI ethically. Ensure that the work you submit is truly your own. Properly disclose and cite how you use AI-generated content. Deepen your critical thinking skills and ability to evaluate AI-generated content and spot false information, biases and fake images, video and audio.

4 **Think beyond your major**

AI brings together knowledge from all disciplines. Develop a multidisciplinary mindset and explore classes in a wide range of subjects. Develop strong skills in using, analyzing and communicating about data and consider getting certifications related to AI.

5 **Commit to lifelong learning**

We are only at the beginning of the AI revolution. New tools and AI uses will continually emerge. Always be on the lookout for what's next. Work collaboratively with your peers and mentors. Adopt a lifelong learning mindset.

6 **Prioritize privacy and security**

Always remember that AI systems are not private; you have limited or no control over how your data will be used. Use only reputable platforms, understand the terms of service and share as little information as possible about yourself or others.

7 **Cultivate your human abilities**

Deepen your empathy and social skills. Stay focused on building strong relationships and thriving in the non-digital world. Exercise your apps-free creativity. Keep your unique human talents sharp in an environment filled with AI interactions.

Acknowledgements

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www.studentguidetoAI.org

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Learn more about the global collaboration on **AI and higher education** coordinated by Elon University. A statement of principles to guide development of AI policies and practices is supported by more than 140 higher education organizations, administrators, researchers and faculty members from 48 countries: bit.ly/45Ik9j1

ELON UNIVERSITY

Elon University is a mid-sized private university in Elon, North Carolina, with a national reputation for experiential learning, teaching excellence and close relationships between students and their faculty and staff mentors. Elon enrolls more than 7,000 undergraduate and graduate students from 48 U.S. states and 54 countries. Elon was founded in 1889 and includes a law school campus in Greensboro, NC, and national campus locations in Los Angeles, Charlotte, New York City and Washington, D.C. elon.edu

AAC&U

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