

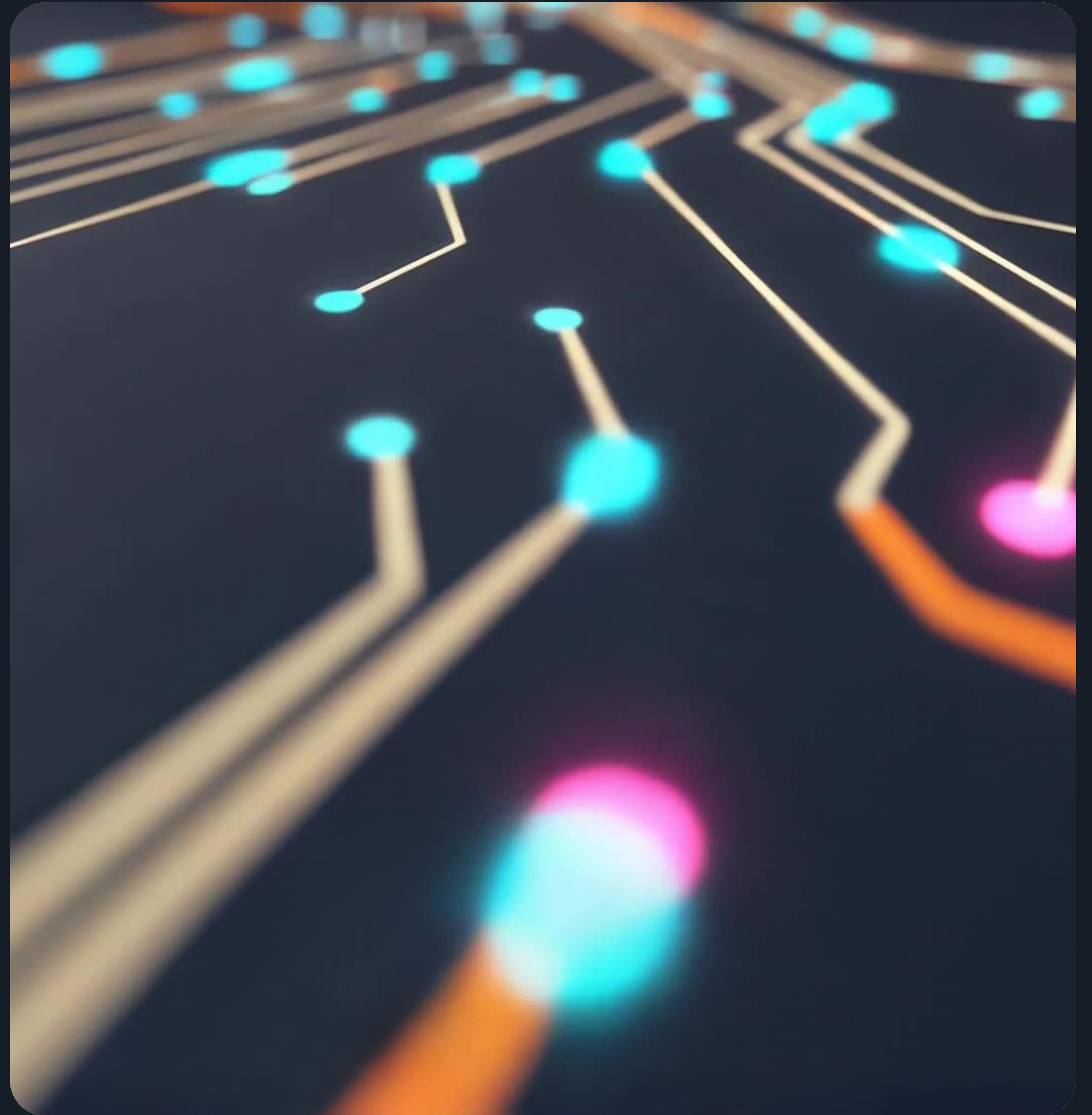
Key Student Learnings

Careers Behind the Code:

Amazon AI Tour



Amazon
Future Engineer





career

tours

Phenomena Question:

How do people use data, algorithms, and technology to create AI tools that solve real-world problems and expand human creativity?

Overarching Content Question:

What careers exist in AI that combine creativity, technology, and problem-solving to design, teach, and build intelligent systems?

Vocabulary

Stop 0

Artificial Intelligence (AI)

Computer systems that can do things usually done by humans, like recognizing voices, recommending videos, or solving problems, by learning from large amounts of data.

Algorithm

A set of step-by-step instructions that tells a computer exactly how to solve a problem or complete a task.

Stop 1

Dataset

A large, organized collection of information that AI systems use to learn patterns and improve over time.

Hardware

The physical parts of a computer system, such as processors, chips, and servers, that handle the heavy computing work behind AI.



Vocabulary

Stop 2

Reinforcement Learning

A type of AI training where a system learns by trying things, getting feedback on what worked and what did not, and gradually improving.

Simulation

A safe, virtual environment where an AI system can practice tasks and make mistakes without causing real-world harm.

Stop 3

User Experience (UX)

How a person feels when using a product or app, including whether it is easy, enjoyable, and useful.

Design

The process of planning and creating how a product looks, works, and feels so that it serves people well.



Vocabulary

Stop 4

AI Agent

A program that can take actions on its own, like browsing a website or filling out a form, based on instructions given by a person.

Automation

Using technology to carry out repetitive tasks without a person having to do them each time.

Stop 5

Ethics

A set of principles that guide people to make fair, responsible, and honest decisions, especially when building powerful technologies like AI.

Guardrails

Safety rules and boundaries built into AI systems to prevent them from doing harmful, unfair, or incorrect things.



Stop 0

AI Overview: What Is Artificial Intelligence?

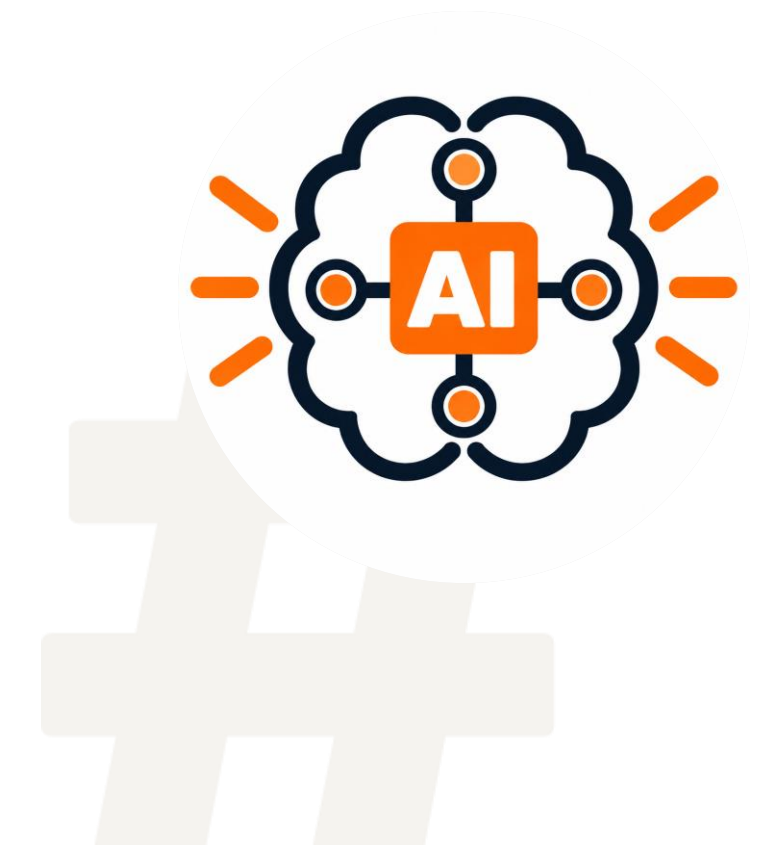
Watch this Tour Stop in: [Video 0](#)

What is artificial intelligence, and how is it already shaping the world around you?

Artificial Intelligence (AI) refers to computer systems that can perform tasks that typically require human thinking, such as recognizing patterns, making decisions, understanding language, and solving problems.

Instead of following a rigid script, AI systems learn from large amounts of data and get better as they are exposed to more information.

At the heart of every AI system is an algorithm—a set of step-by-step instructions that tells a computer how to solve a problem or complete a task.



CAREER FOCUS:
Building AI Systems

Stop 0

AI Overview: What Is Artificial Intelligence?

Watch this Tour Stop in: [Video 0](#)

Vocabulary Review Question

Which of these everyday experiences is powered by Artificial Intelligence (AI)?

A. A streaming service recommending a show you want to watch

B. A book sitting on a shelf

C. A light switch turning a lamp on

D. A pencil writing on paper



Stop 0

AI Overview: What Is Artificial Intelligence?

Watch this Tour Stop in: [Video 0](#)

Vocabulary Review Question

Which everyday example is most like an algorithm?

- A. A pile of ingredients on a counter
- B. A recipe that lists steps in order to make a dish**
- C. A blank sheet of paper
- D. A photo of a finished meal



Vocabulary

Stop 0

Artificial Intelligence (AI)

Computer systems that can do things usually done by humans, like recognizing voices, recommending videos, or solving problems, by learning from large amounts of data.

Algorithm

A set of step-by-step instructions that tells a computer exactly how to solve a problem or complete a task.



Standards Stop 0

Next Generation Science Standards (NGSS)

- Crosscutting Concepts: Systems and system models (how AI functions as an interconnected system of data, algorithms, and hardware).

Common Core Math

- MP.1: Make sense of problems and persevere in solving them (analyzing how AI uses algorithms to solve complex tasks).

Common Core ELA

- CCSS.ELA-LITERACY.RI.6-8.4: Determine the meaning of domain-specific words and phrases as they are used in a text.
- CCSS.ELA-LITERACY.SL.6-8.1: Engage in collaborative discussions about technology and its role in society.

CSTA Computer Science Standards

- 1B-IC-18: Discuss computing technologies that have changed the world and how they influence cultural practices.
- 2-IC-20: Compare tradeoffs associated with computing technologies that affect everyday activities and career options.



Stop 1

Foundations of AI Systems: Data and Hardware

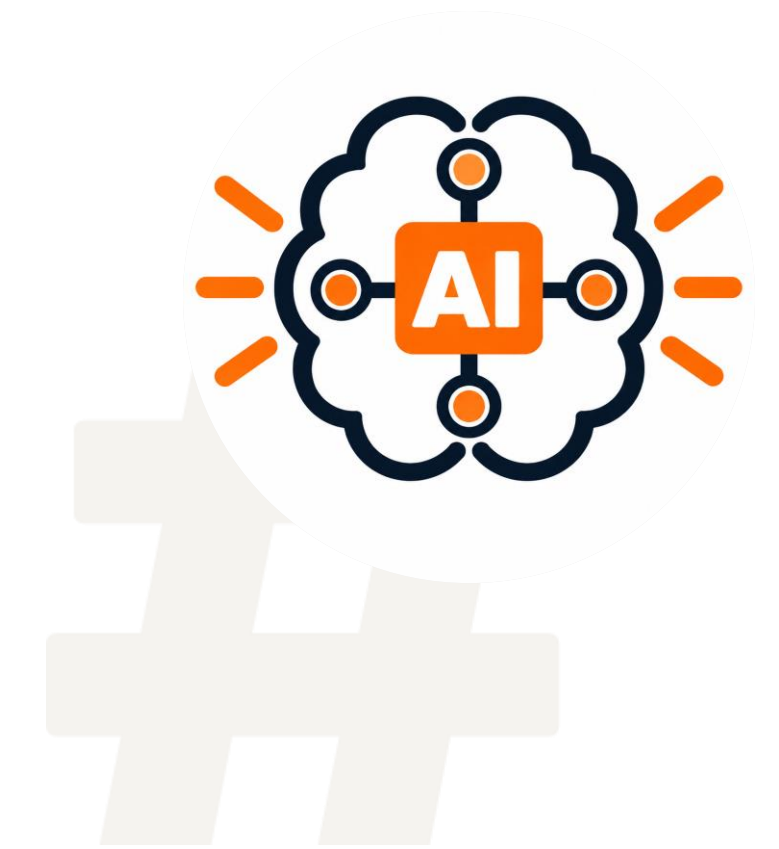
Watch this Tour Stop in: [Video 1](#)

What are the essential building blocks that make it possible to create and run AI systems?

At the core of any AI system are three essential building blocks: data, models, and computing power.

A dataset is a large, organized collection of information that AI systems use to learn patterns and improve over time. A model learns from that data to identify patterns and make predictions.

Computing power uses special hardware to train and run AI models. Together, data, models, and computing power make it possible to create and deploy AI systems.



CAREER FOCUS:
Building AI Systems

Stop 1

Foundations of AI Systems: Data and Hardware

Watch this Tour Stop in: [Video 1](#)

Vocabulary Review Question

What does an AI system need in order to learn?

- A. **A large collection of organized information (data)**
- B. A comfortable chair

- C. A single sentence
- D. Nothing — it already knows everything



Stop 1

Foundations of AI Systems: Data and Hardware

Watch this Tour Stop in: [Video 1](#)

Vocabulary Review Question

What is a dataset?

- A. The physical chips and processors inside a computer
- B. A large, organized collection of information AI uses to learn patterns
- C. A single button on a screen
- D. The colors and layout of an app

BONUS (Fill-in-the-Blank)

A large, organized collection of information that an AI learns from is called _____.

- A. **A dataset**
- B. A password
- C. A keyboard
- D. A single photo



Vocabulary

Stop 1

Dataset

A large, organized collection of information that AI systems use to learn patterns and improve over time.

Hardware

The physical parts of a computer system, such as processors, chips, and servers, that handle the heavy computing work behind AI.



Standards Stop 1

Next Generation Science Standards (NGSS)

- HS-ETS1-2: Design solutions to complex problems by breaking them into smaller components (datasets as essential inputs for AI).
- Crosscutting Concept: Scale, proportion, and quantity (understanding how dataset size affects AI performance).

Common Core Math

- CCSS.MATH.CONTENT.6.SP.A.1: Recognize statistical questions and the role of data collection in understanding real-world phenomena.

Common Core ELA

- CCSS.ELA-LITERACY.RI.6-8.7: Integrate information presented in different formats (comparing datasets to traditional research methods).

CSTA Computer Science Standards

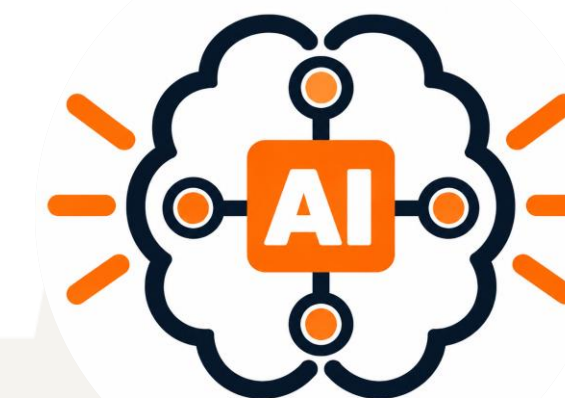
- 3A-CS-02: Explain how data is stored and processed in computing systems, and identify factors that affect how reliably data is transmitted and interpreted.
- 3A-DA-09: Refine computational models based on the results of testing the models on real-world data.



Career Spotlight Stop 1

Annika Huston | Member of Technical Staff | San Francisco, CA

Annika Huston is a Member of Technical Staff, a role that involves hands-on work building and improving AI systems. Based in San Francisco, Annika contributes to research and development at the cutting edge of what AI can do. Her work often involves experimenting with new ideas, testing whether they hold up in real applications, and collaborating with a team of engineers and scientists. Being a Member of Technical Staff is one of the foundational roles in AI development, where new discoveries are made and turned into real products.



Stop 2

Training and Improving AI: Reinforcement Learning and Simulation

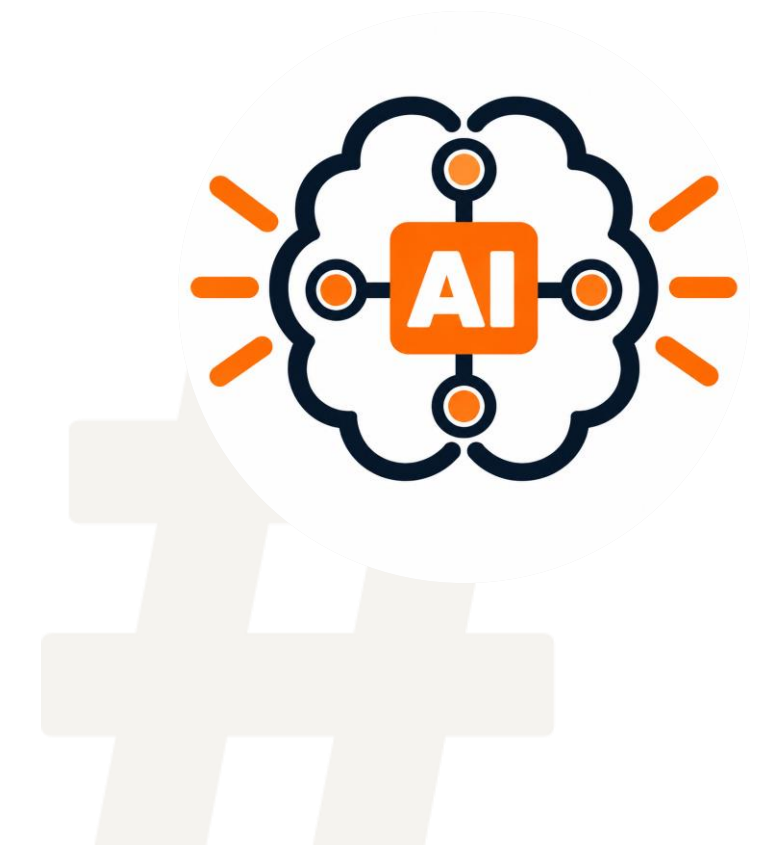
Watch this Tour Stop in: [Video 2](#)

How do we teach AI models to get better over time, and why is safe practice so important during that process?

Reinforcement learning is a type of AI training where a system learns by trying things, getting feedback, and gradually improving.

AI can practice in a simulation—a safe, virtual environment where it can make mistakes without causing real-world harm.

The AI makes decisions, gets feedback, and adjusts its behavior. Human experts also evaluate its performance and help guide the system toward better behavior.



CAREER FOCUS:
Building AI Systems

Stop 2

Training and Improving AI: Reinforcement Learning and Simulation

Watch this Tour Stop in: [Video 2](#)

Vocabulary Review Question

How do you get better at a new skill over time?

A. You practice, get feedback, and improve step by step

B. You give up after the first try

C. You only read about it and never try

D. You expect to be perfect immediately



Stop 2

Training and Improving AI: Reinforcement Learning and Simulation

Watch this Tour Stop in: [Video 2](#)

Vocabulary Review Question

Why is a simulation useful for training AI?

A. It lets AI practice and make mistakes safely, without real-world harm

B. It makes the AI run more slowly

C. It replaces the need for any data

D. It is only used for playing music



Vocabulary

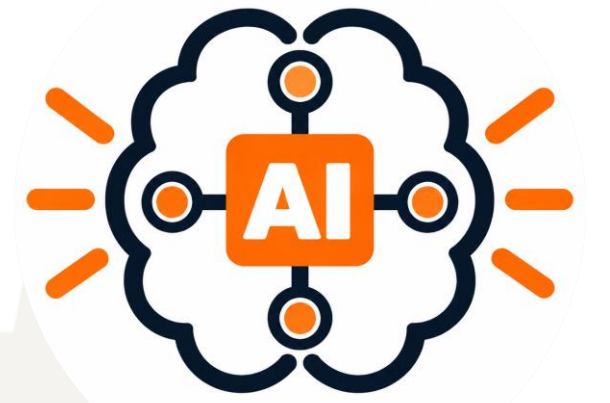
Stop 2

Reinforcement Learning

A type of AI training where a system learns by trying things, getting feedback on what worked and what did not, and gradually improving.

Simulation

A safe, virtual environment where an AI system can practice tasks and make mistakes without causing real-world harm.



Standards Stop 2

Next Generation Science Standards (NGSS)

- HS-ETS1-4: Use a computer simulation to model the impact of proposed solutions to a complex real-world problem.
- Science and Engineering Practice: Using mathematics and computational thinking to analyze and predict outcomes.

Common Core Math

- CCSS.MATH.CONTENT.7.SP.A.2: Use data from a random sample to draw inferences (parallel to how reinforcement learning uses feedback data).

Common Core ELA

- CCSS.ELA-LITERACY.RI.6-8.3: Analyze how a text makes connections among and distinctions between individuals, ideas, or events.

CSTA Computer Science Standards

- 3A-AP-16: Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal need.
- 3A-AP-17: Systematically test and refine programs using a range of test cases, based on anticipating common errors and corner cases.



Career Spotlight Stop 2

Karan Bhandarkar | Principal Technical Project Manager (AGI Product) | Boston, MA

Karan Bhandarkar works as a Principal Technical Project Manager in Amazon's AGI (Artificial General Intelligence) Product group. His job involves coordinating the people, timelines, and technical processes that go into training and improving AI systems. When teams are running reinforcement learning experiments or setting up simulation environments, someone needs to make sure all the moving parts are working together, deadlines are being met, and problems are being solved quickly. That is exactly what Karan does.

Project management in AI is different from project management in other industries because the work is highly experimental. You cannot always predict how long a training run will take or what challenges will come up when you move from simulation to a real environment. Karan has to be comfortable with uncertainty and skilled at helping teams adapt quickly. His background includes technical knowledge (he understands what the engineers are doing) as well as organizational skills (he keeps everyone on track). This combination makes him invaluable to the teams building Amazon's most advanced AI systems.



Stop 3

Designing AI Systems: User Experience and Design

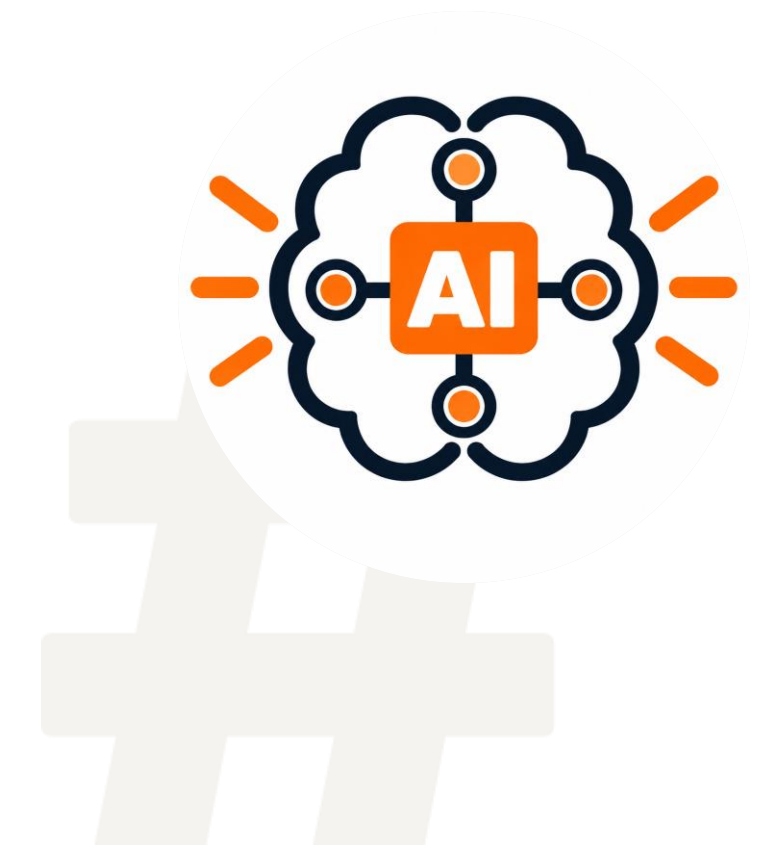
Watch this Tour Stop in: [Video 3](#)

How do people design AI systems that are useful and aligned with the needs of real users?

User Experience (UX) is how a person feels when using a product or app. Good UX makes a product easy to understand, enjoyable, and helpful.

Design is the process of planning how a product looks, works, and feels so that it serves people well.

Designers test their ideas with real users, gather feedback, and improve them. Great design is inclusive and works for as many people as possible.



CAREER FOCUS:
Building AI Systems

Stop 3

Designing AI Systems: User Experience and Design

Watch this Tour Stop in: [Video 3](#)

Vocabulary Review Question

What makes the difference between a good and bad experience using technology?

A. How well it is designed for the people using it

B. The brand name of the company

C. How expensive the phone is

D. The time of day you use it



Stop 3

Designing AI Systems: User Experience and Design

Watch this Tour Stop in: [Video 3](#)

Vocabulary Review Question

Which is an example of a good "User Experience" (UX)?

- A. A "Checkout" button hidden at the very bottom of the page
- B. An app that autocorrects your address to the wrong one

C. A clear layout where you can easily search, add to cart, and check out

- D. A "Remove" button placed right next to "Pay Now"



Vocabulary

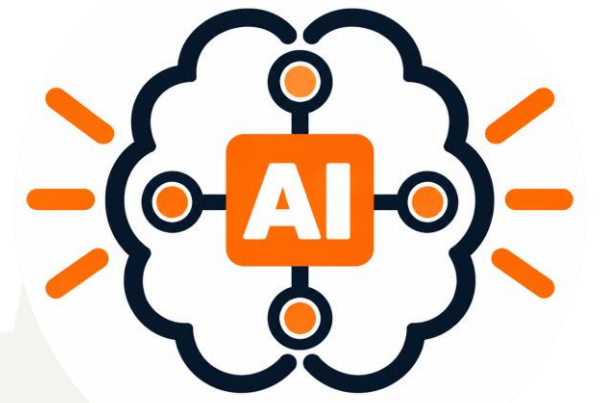
Stop 3

User Experience (UX)

How a person feels when using a product or app, including whether it is easy, enjoyable, and useful.

Design

The process of planning and creating how a product looks, works, and feels so that it serves people well.



Standards Stop 3

Next Generation Science Standards (NGSS)

- HS-ETS1-1: Analyze complex real-world problems considering criteria and constraints, including human needs and values (inclusive design).

Common Core Math

- MP.6: Attend to precision (designing clear, accurate AI interfaces that communicate information without ambiguity).

Common Core ELA

- CCSS.ELA-LITERACY.W.6-8.4: Produce clear and coherent writing appropriate to task and audience (parallels user experience writing and interface text).

CSTA Computer Science Standards

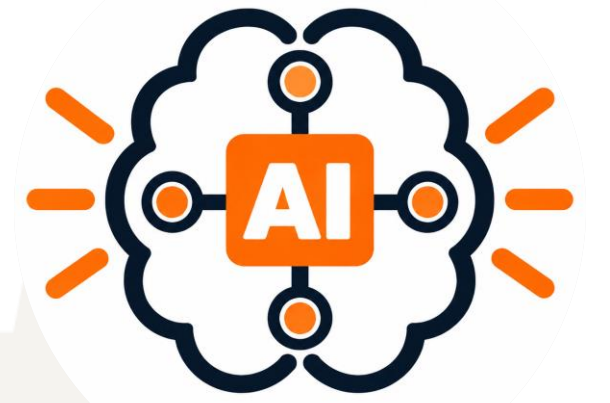
- 3A-AP-13: Create prototypes that use algorithms to solve computational problems, considering technical and usability constraints.
- 3A-IC-26: Demonstrate ways that people participate in problem-solving processes at scale and how computing enhances human capabilities.



Career Spotlight Stop 3

Luciana Corteggiano | Member of Technical Staff | Boston,

MISSING DESCRIPTION



Stop 4

AI in the Real World: AI Agents and Automation

Watch this Tour Stop in: [Video 4](#)

How are AI systems being used right now to take on tasks, solve real problems, and change the way people work?

An AI agent is a program that can take actions on its own based on instructions given by a person. It can browse websites, fill out forms, gather information, or complete multi-step tasks.

Automation uses technology to carry out repetitive tasks without a person having to do them each time.

By handling routine work, AI can free people to focus on creative thinking, complex problem-solving, and decisions that require human judgment.



CAREER FOCUS:
Building AI Systems

Stop 4

AI in the Real World: AI Agents and Automation

Watch this Tour Stop in: [Video 4](#)

Vocabulary Review Question

What is the technology used to do repeated tasks without a person doing each one?

A. Automation

B. Deletion

C. Decoration

D. Hibernation



Stop 4

AI in the Real World: AI Agents and Automation

Watch this Tour Stop in: [Video 4](#)

Post-Stop Trivia Poll

What is an AI agent able to do?

- A. Only display text on a screen
- B. Take actions on its own — like browsing a website or filling out a form — based on instructions**

C. Charge the battery of a phone

D. Physically build computer chips



Vocabulary

Stop 4

AI Agent

A program that can take actions on its own, like browsing a website or filling out a form, based on instructions given by a person.

Automation

Using technology to carry out repetitive tasks without a person having to do them each time.



Standards Stop 4

Next Generation Science Standards (NGSS)

- HS-ETS1-3: Evaluate solutions to a complex real-world problem based on prioritized criteria and trade-offs (efficiency vs. human oversight in automation).

Common Core Math

- MP.4: Model with mathematics (understanding how AI agents use models to make decisions in real-world digital environments).

Common Core ELA

- CCSS.ELA-LITERACY.RI.6-8.8: Trace and evaluate the argument and specific claims in a text (analyzing how AI agents are presented in media and industry).

CSTA Computer Science Standards

- 3A-IC-24: Evaluate the ways computing impacts personal, ethical, social, economic, and cultural practices (AI automation and workforce changes).
- 3A-AP-13: Create computational artifacts addressing complex real-world problems through AI agent design and deployment.



Career Spotlight Stop 4

Tara Raj | Senior Engineering Manager | Boston, MA

Tara Raj leads an engineering team working on AI systems at Amazon's Boston office. As a Senior Engineering Manager, her job is to guide a group of software engineers toward building reliable, high-quality AI products. She sets technical direction, helps her team work through hard problems, and makes sure everyone has what they need to do their best work. Engineering management in AI requires both deep technical knowledge and strong leadership skills. Tara's career path shows that you can be a technically excellent engineer and a people-first leader at the same time. She is also a strong advocate for diversity in technology, believing that teams with different perspectives build better products.



Stop 5

Responsible AI: Ethics and Guardrails

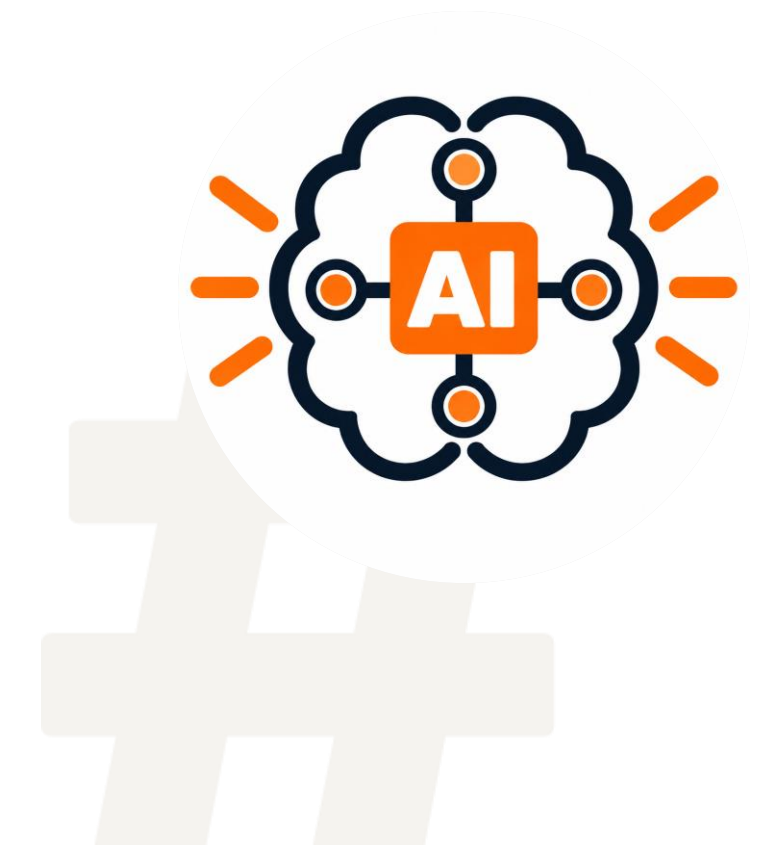
Watch this Tour Stop in: [Video 5](#)

How do we make sure AI systems are safe, fair, and used in ways that benefit people rather than harm them?

Ethics are principles that guide people to make fair, responsible, and honest decisions when building AI.

Guardrails are safety rules and boundaries that prevent AI systems from doing harmful, unfair, or incorrect things.

For important decisions, humans stay in the loop: AI supports human decision-making, while a person reviews the recommendation and makes the final call.



CAREER FOCUS:
Building AI Systems

Stop 5

Responsible AI: Ethics and Guardrails

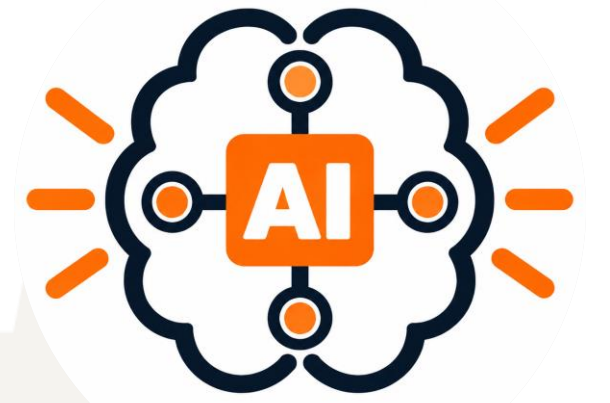
Watch this Tour Stop in: [Video 5](#)

Vocabulary Review Question

What word describes the principles that guide people to make fair, responsible, and honest decisions?

- A. Ethics
- B. Graphics

- C. Statistics
- D. Physics



Stop 5

Responsible AI: Ethics and Guardrails

Watch this Tour Stop in: [Video 5](#)

Vocabulary Review Question

What are guardrails in an AI system?

- A. Physical rails on the side of a computer
- B. Safety rules and boundaries built in to prevent AI from doing harmful, unfair, or incorrect things**
- C. A type of dataset
- D. The colors used in an app

BONUS (Fill-in-the-Blank)

The safety rules and boundaries built into an AI system to keep it from causing harm are called _____.

- A. Guardrails**
- B. Graphics
- C. Gigabytes
- D. Gadgets



Vocabulary

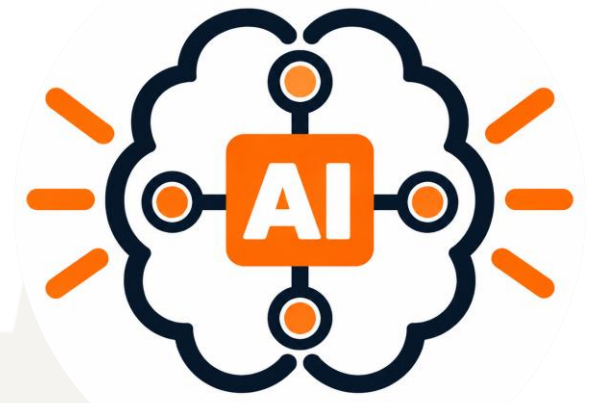
Stop 5

Ethics

A set of principles that guide people to make fair, responsible, and honest decisions, especially when building powerful technologies like AI.

Guardrails

Safety rules and boundaries built into AI systems to prevent them from doing harmful, unfair, or incorrect things.



Standards Stop 5

Next Generation Science Standards (NGSS)

- HS-ETS1-1: Analyze complex real-world problems, considering societal implications, constraints, and ethical dimensions of technology design.

Common Core Math

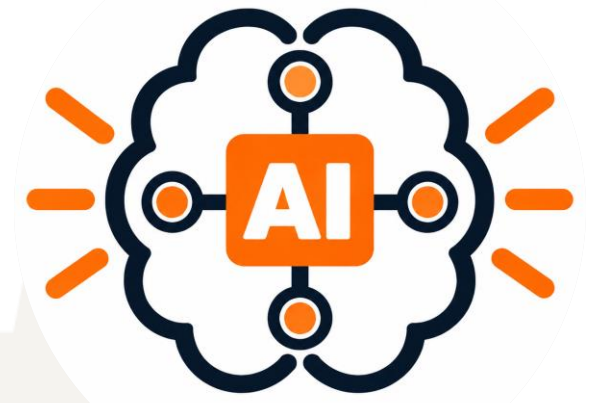
- MP.3: Construct viable arguments and critique the reasoning of others (evaluating the fairness of AI systems and their decision processes).

Common Core ELA

- CCSS.ELA-LITERACY.RI.6-8.6: Determine an author's point of view or purpose; analyze how the author acknowledges and responds to conflicting evidence.
- CCSS.ELA-LITERACY.SL.6-8.4: Present claims and findings, emphasizing relevant evidence to support main ideas (constructing arguments about AI ethics).

CSTA Computer Science Standards

- 3A-IC-24: Evaluate the ways computing impacts personal, ethical, social, economic, and cultural practices.
- 3A-IC-27: Predict how computational innovations that have revolutionized aspects of our culture might evolve; analyze tradeoffs for individuals and society.



Career Spotlight Stop 5

Dan Rosen | Risk Manager, Responsible AI, Risk and Policy | Boston, MA

Dan Rosen works as a Risk Manager in Amazon's AGI group, focusing specifically on Responsible AI, risk, and policy. His job is to identify the ways in which AI systems could cause harm, whether through biased outputs, privacy violations, safety failures, or misuse, and to build processes that prevent those harms before they happen. Dan works at the intersection of technology and policy, translating technical realities into governance frameworks that guide how AI is built, tested, and deployed.

Dan's career is a powerful example of how a background in law, policy, or social science can lead directly into a role at the forefront of AI. He does not write code, but his work shapes the rules that code must follow. He collaborates with engineers, product managers, legal teams, and external experts to make sure that Amazon's AI systems meet the highest standards of safety and fairness. If you are interested in justice, policy, or the social impact of technology, a career path like Dan's is worth considering seriously. The field of AI policy and responsible AI is growing rapidly and needs people who can think carefully about the consequences of powerful technologies.



Stop 6

Conclusion: Your Path in AI

Watch this Tour Stop in: [Video 6](#)

What has this tour taught you about AI, and how might the careers you have seen today connect to your own interests and future?

AI needs many different talents: Engineers, designers, researchers, data scientists, and many others work together to build AI.

There is no single path into AI: Curiosity, creativity, problem-solving, and teamwork can be just as important as technical skills.

You can help shape what comes next: The AI of the future will be built by your generation. What you learn and explore today could be the first step toward being part of it.

CAREER FOCUS:
Building AI Systems



Stop 6

Conclusion: Your Path in AI

Watch this Tour Stop in: [Video 6](#)

Review Question

What do all of these AI careers have in common?

A. They all require curiosity, problem-solving, and working with technology

B. They all require you to work completely alone

C. They all avoid using computers

D. They all existed exactly the same 100 years ago



Stop 6

Conclusion: Your Path in AI

Watch this Tour Stop in: [Video 6](#)

Review Question

Putting it all together: which sequence correctly shows how an AI system comes to life, from start to responsible use?

A. Guardrails → dataset → model → design

B. Data → Design → Training → Agents → Guardrails

C. Automation → nothing else is needed

D. Design → delete the data → ship it



Survey Polls

Poll

Of the careers you saw today, which interests you most?

- A. Senior Applied AI Architect (Jean Farmer)
- B. Member of Technical Staff (Annika Huston)
- C. Principal Product Designer / UX Lead (James Powderly)
- D. Principal Technical Project Manager (Karan Bhandarkar)
- E. Senior Technical Program Manager (Felipe Blanes)
- F. Senior Engineering Manager (Tara Raj)
- G. Risk Manager, Responsible AI (Dan Rosen)

On a scale from 0 to 10, how likely are you to recommend the Careers Behind the Code: Amazon AI Tour to a friend or classmate?

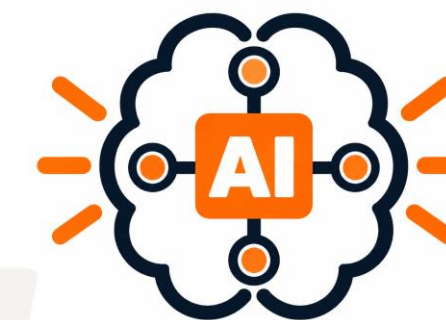
0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10

Overall, rate your tour experience on a scale of 1-5

- 1. Extremely unsatisfactory
- 2. Unsatisfactory
- 3. Neither unsatisfactory or satisfactory
- 4. Satisfactory
- 5. Extremely satisfactory

This tour increased my interest in pursuing a career in computer science, technology, or engineering.

- 1. Strongly disagree
- 2. Disagree
- 3. Neither agree nor disagree
- 4. Agree
- 5. Strongly Agree



Rapid Fire Review 1

Review

What is Artificial Intelligence (AI)?

- A. A physical part of a computer
- B. A safe place for a computer to practice
- C. **Computer systems that can learn and do tasks usually done by humans**
- D. A set of safety rules

What is an algorithm?

- A. **A set of steps that tells a computer how to complete a task**
- B. A large collection of information
- C. The physical parts of a computer
- D. How a person feels when using an app

Which word means a large collection of information that AI can learn from?

- A. Hardware
- B. Design
- C. Automation
- D. **Dataset**

What are guardrails in AI?

- A. A way for AI to learn from feedback
- B. A collection of information used to train AI
- C. **Safety rules and boundaries that help prevent AI from doing harmful or incorrect things**
- D. The physical parts of a computer



Rapid Fire Review 2

Review

What are guardrails in AI?

- A. A way for AI to learn from feedback
- B. A collection of information used to train AI
- C. **Safety rules and boundaries that help prevent AI from doing harmful or incorrect things**
- D. The physical parts of a computer

Which two words describe how AI can practice, get feedback, and improve safely?

- A. **Reinforcement Learning and Simulation**
- B. Design and Hardware
- C. Algorithm and Dataset
- D. Ethics and Automation

Which two words are about how a product is created and how it feels to use?

- A. Dataset and Hardware
- B. Ethics and Guardrails
- C. **Design and User Experience (UX)**
- D. AI Agent and Automation

What does ethics mean when creating AI?

- A. **Making fair, responsible, and honest decisions**
- B. Making AI work as fast as possible
- C. Teaching AI to complete tasks automatically
- D. Building the physical parts of a computer

