Understanding and Exploring AI: A Beginner’s Primer

Del Siegle

University of Connecticut
Pretend your entire understanding of the English language is the following four sentences:

“The cat crouched quietly behind the house plant, patiently waiting for the perfect moment to pounce on the unsuspecting mouse. Despite the enticing toys scattered across the floor, including a colorful ball and a feathered wand, the cat remained focused on its true prey: the mouse. The mouse darted from its hiding spot beneath the lamp, unaware that the cat was already anticipating its next move. With a swift, calculated leap, the cat chased the mouse, leaving the ball, house plant, and lamp undisturbed in its pursuit.”
Predict the next word in the following sentence:

The cat chased the...
First we need to break the sentence up into smaller pieces, or *tokenize* the input.

- Here we’re doing it by word for simplicity, but models like chatGPT generally use sub-word tokenization.
Our “training data” only mentions that cats chase mice, not anything else.
Generative AI can be thought of as a very, very smart parrot.

-- Alexander Solod

How AI is Changing, and Can Change, Education
Generative Video

Some ways AI can be used in gifted education:

- Productivity tool
- Advanced information resource
- Research tool
- Edit feedback
- Differentiated content
- Personalized learning
- Engaging conversations
- Coding assistant
Don’t forget to...

• Discuss responsible use
• Avoid sharing personal data
• Learn how to effectively ask questions
• Caution that garbage in results in garbage out and many of the ills of society aren’t censored
• Encourage critical thinking about AI output
### Teaching Assistants

<table>
<thead>
<tr>
<th>Tool</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>MagicSchool AI</td>
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<td>EduGPT</td>
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### Presentations

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### Chatbot

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### Course Creation

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### Language Learning

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### Text-to-Speech

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### Audio

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<tr>
<td>Cleanvoice</td>
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</table>
goblin.tools

Magic ToDo
Formalizer
Judge
Professor
Estimator
Compiler
Chef

Spiciness level:
How basic do you need the explanation to be?
goblin.tools

Magic ToDo
Formalizer
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Chef
goblin.tools

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Formalizer

Turn the spicy thoughts into classy ones, or vice versa

Enter your text here...

Make my text: More professional

Your converted text will appear here...
goblin.tools

Magic ToDo
Formalizer
Judge
Professor
Estimator
Compiler
Chef

The Judge
Am I misreading the tone of this?

Enter your text here...

Judge
Suggest a response

Your text comes across as...
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Magic ToDo
Formalizer
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The Professor
Give me the crash course

Enter something here...

An explanation here...

With an example here...
goblin.tools

Magic ToDo
Formalizer
Judge
Professor
Estimator
Compiler
Chef

Estimator

Just tell me how long this is probably gonna take

Now also available on Magic Todo items!

Enter an activity here...

Estimate

This will take roughly...
goblin.tools

Magic ToDo
Formalizer
Judge
Professor
Estimator
Compiler
Chef

Compiler
Compile my braindump into a list of tasks

Enter your braindump here...

Turn into tasks
The Chef
What am I having for lunch?

Write what ingredients you have here! You can also write down dietary constraints, serving sizes, equipment, time, or anything else you want the Chef to take into account.

Suggest

You could cook...
How do black holes work

Answer

Black holes are incredibly dense regions of space where gravity is so strong that nothing, not even light, can escape once it passes the event horizon. Here’s how they work:

1. Formation:
   Black holes typically form when massive stars die and collapse under their own gravity. The star’s core becomes compressed into an incredibly dense point called a singularity.

2. Structure:
   - Singularity: The center of the black hole with infinite density and zero volume.
   - Event horizon: The boundary beyond which nothing can escape the black hole’s gravitational pull.

3. Gravity and spacetime:
   Black holes warp spacetime around them due to their extreme density. This warping is what creates the intense gravitational effects associated with black holes.

4. Growth:
   Black holes can grow by accreting nearby matter pulled in by their immense gravity. They can also merge with other black holes, increasing in size and mass.

5. Detection:

   - Studying the orbits of nearby stars
Introduction to Montana

Montana is vast, rugged, and breathtakingly beautiful state in the northwestern United States. With its towering mountains, sprawling prairies, and crystal-clear rivers, it offers a diverse and awe-inspiring landscape that has captivated visitors for generations.

by Del Siegle
Last edited 3 minutes ago

Geography and Landscape

1 Mountainous Terrain
Montana is home to the Rocky Mountains, with its high peaks, valleys, and glacial-carved landscapes.

2 Diverse Ecosystems
From the alpine tundra to the rolling grasslands, Montana boasts a variety of ecosystems, each with its own unique flora and fauna.

3 Major Rivers
The Missouri, Yellowstone, and Flathead rivers are just a few of the major waterways that crisscross the state.

Population and Demographics

1 Sparse Population

Geography and Weather

1 Extreme Temperatures
Montana experiences extreme weather conditions, ranging from scorching summers to freezing winters.

2 Unpredictable Storms
Montana is known for its unpredictable weather, with sudden storms and tornadoes sometimes occurring in the state.

3 Varied Micrometeors
Due to its diverse geography, Montana experiences a range of microclimates, from the cool mountain slopes in the western mountains to the hot, dry plains in the east.

Native American...

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Native American...
Khanmigo Tools
Free AI powered tools designed to save you time and improve instruction!

- **Chunk Text**: Break complex texts into manageable sections for easier student comprehension.
- **Clear Directions**: Generate concise, easy-to-follow instructions for assignments and activities.
- **Fun Class Summary Poem**: Transform memorable class moments into a creative poetic recap.
- **Class Newsletter**: Produce engaging newsletters to keep parents informed about class activities.
- **Discussion Prompts**: Craft engaging prompts to stimulate meaningful classroom discussions.
- **Exit Ticket**: Create quick end-of-lesson assessments to check student understanding.
- **IEP Assistant**: Streamline the creation of Individualized Education Plans.
- **Informational Text**: Create informational text for a variety of topics.
- **Class Snapshot**: Review your students' performance and trends.