

Why is everybody talking about Generative AI?

Deepsha Menghani

Who here has heard about ChatGPT?

Recently my friend texted me this -

“DEEPSHA! I can’t believe I missed your birthday by a week! I am so sorry I did not reach out on that day. Happy belated birthday. I hope you had an absolutely amazing day!”

I truly appreciated the thoughtful message.

...so, I asked ChatGPT to formulate a truly thoughtful response for me...

PROMPT

Help me formulate a response to my friend's text

RESPONSE

"Your thoughtful message is sincerely appreciated.
While the passing of my birthday went unnoticed,
your belated well-wishes have touched my heart.
Gratefully, [Your Name]"

That is way too formal, make it less so

OMG! Don't even worry about missing my b-day –
life gets cray sometimes, ya know? Thanks a bunch
for the belated wishes, girl!

That sounds like a teenager, can you do something
in between?

"Thank you so much for the sweet message! No
worries at all, I truly appreciate your belated
birthday wishes. It means a lot to me!"



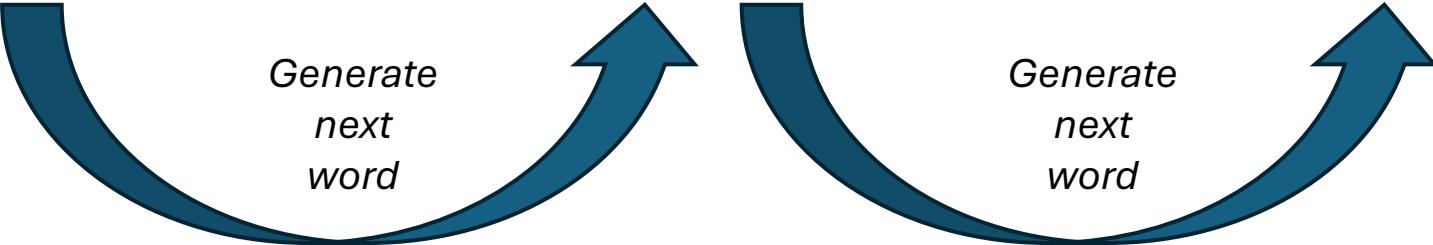
Generative AI is a type of artificial intelligence that can create new content, like text, images, or music, based on the patterns it has learned from existing data.



Twinkle Twinkle...

Little...

Star...



Generate
next
word

Generate
next
word

FOMO

***FOHCWIETAGAIPMWDIES**

** FOHCWIETAGAIPMWDIES – Fear Of Holy Cow Why Is Everybody Talking About Gen AI Panic Mode Where Do I Even Start*

- Spark creative ideas around you
- Reflect on its implications

Let's chat with CAB - Cascadia Agenda Bot



Show Similarity Score:

Yes

No

Similarity Threshold:



Cascadia R Conf 2024

Cascadia R Conference is an R conference serving the Pacific Northwest (OR/WA/BC). This event is a place to come together around R and get together with like-minded people across the region.

Please enter your question about the conference agenda and press 'Go':

Go



.....

Special Thanks to the Organizing Committee:

Ellis Hughes, Jacqueline Nolis, Kim Dill-McFarland, Brittany Barker, Brittney Kroiss, Cameron Mulder, Cari Gostic, Dominik Grätz, Ezgi Yucel, Jadey Ryan, Katie Masiello, Lydia Gibson, Miranda Fix, Mohsen Soltanifar, Peter Geissert, Rhonda Crate, Tim Anderson



This is where Generative AI becomes
powerful – when you make it work for you

Matrix of Generative AI Scenarios

DIRECT

CUSTOMIZED

COMMERCIAL

DIRECT

CUSTOMIZED

COMMERCIAL

Prompt



Response

DIRECT

Prompt



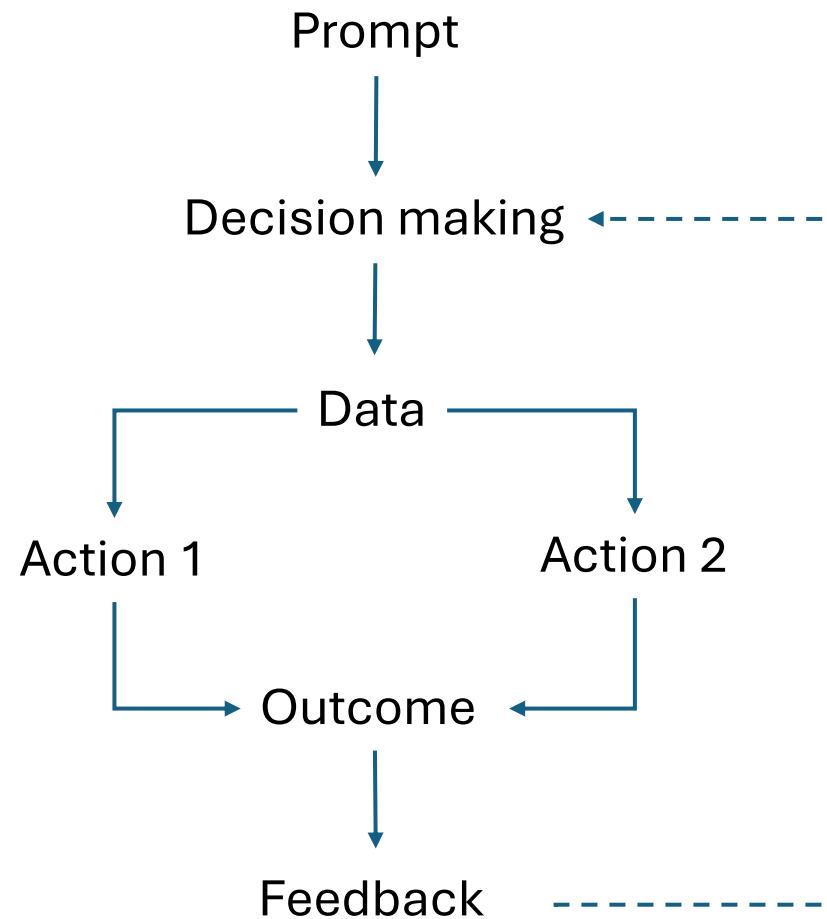
Data



Response

CUSTOMIZED

COMMERCIAL



DIRECT

CUSTOMIZED

COMMERCIAL

DIRECT

Financial Literacy

CUSTOMIZED

Budget and Tax Optimization

COMMERCIAL

Fraud Detection

DIRECT

Financial Literacy

CUSTOMIZED

Budget and Tax Optimization

COMMERCIAL

Fraud Detection

Finance

DIRECT

Financial Literacy

CUSTOMIZED

Budget and Tax Optimization

COMMERCIAL

Fraud Detection



Key Benefits of Generative AI for Fraud Detection

Synthetic Data for Model Training



Real-time Analysis



Dynamic Anomaly Detection

Adaptive Learning

Combating AI-Enabled Fraud



Improved Machine Learning



Data Augmentation



DIRECT

Health Routine Development

CUSTOMIZED

Fitness/Health Data Summarization

COMMERCIAL

Medical Image Processing

Healthcare

DIRECT

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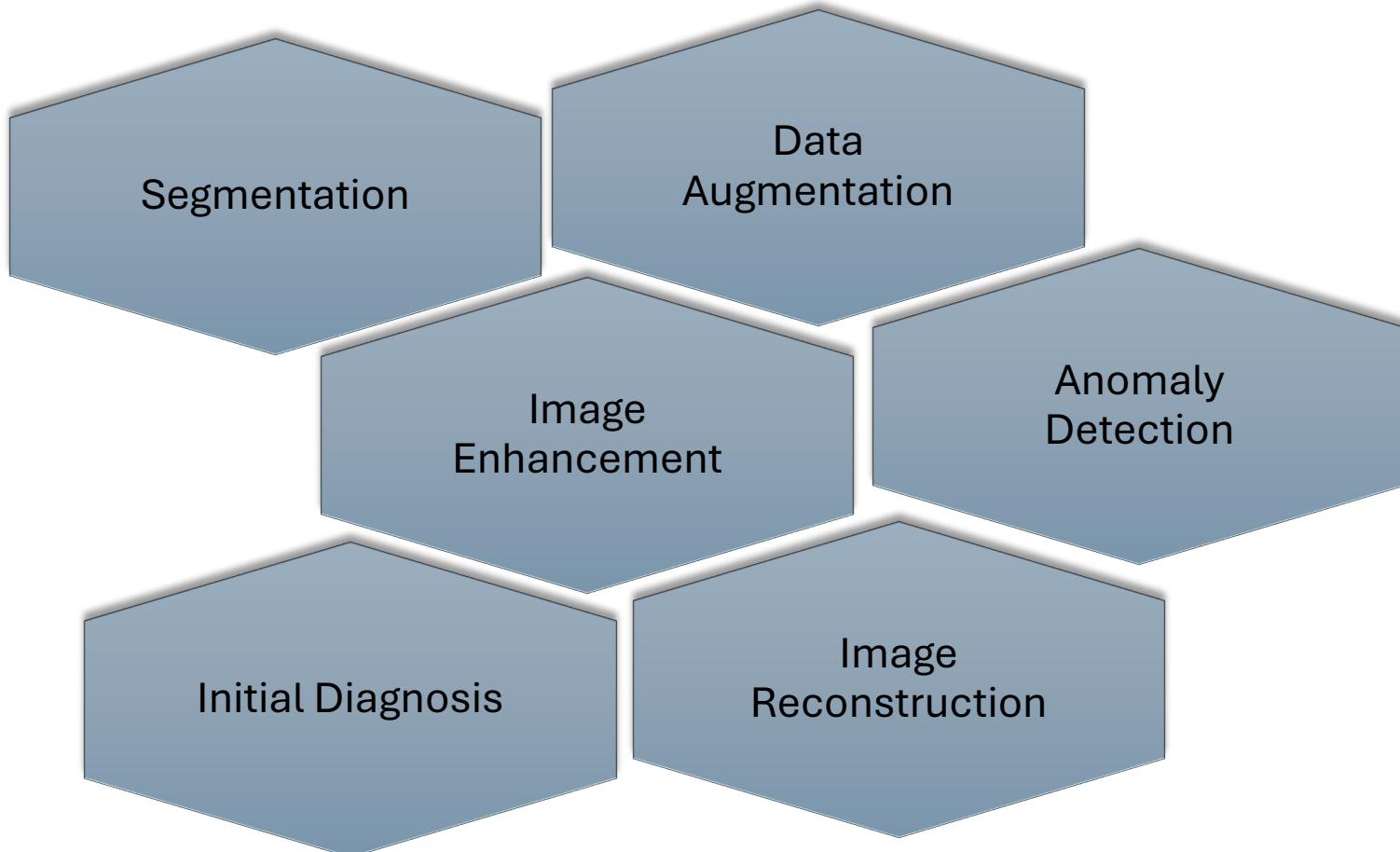
Health Routine Development

CUSTOMIZED

Fitness/Health Data Summarization

COMMERCIAL

Medical Image Processing



Education

DIRECT

Conceptual Understanding

CUSTOMIZED

Personalized Study Plan

COMMERCIAL

Reasoning and Content Generation

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Reasoning and Content Generation

The screenshot shows the Khan Academy website interface with a dark blue header. In the top right corner, there are links for "Courses", "Search", and a magnifying glass icon. The main content area features a question about US history and an AI-generated response from "Khanmigo".

Khan Academy

Courses ▾ Search

Flags Check a11y

Khanmigo beta

AI power

This conversation is recorded and viewable by your teacher.

Can you give me a good lesson hook? Make it exciting!

Absolutely! How about starting the lesson with a short role-play activity? Divide your students into groups and assign each group a different country involved in the Spanish-American War.

Type message (do NOT share any personal data)

Clear chat

Khanmigo makes mistakes sometimes. Here's why.

Which of the following countries did the United States negotiate a peace and exchange for American prisoners held in Cuba during the nineteenth-century most successfully?

Choose 1 answer:

- (A) The United States exchanged for American prisoners held in Cuba.
- (B) The United States traded with East Asia.
- (C) The United States pursued its own interests.

You

DIRECT

CUSTOMIZED

COMMERCIAL

Code Assistance / Copilot

Specific: Use expressive names (and comments)

- Use expressive names for variables, functions, and objects (this is best practice anyway!)

```
# given a word like "_ack" return a regex that will match --
# the known letters, but any lower case letter instead of _
#
regex_from_word <- function(word){|
  word |>
    stringr::str_replace_all("_", "[a-z]") |>
    stringr::regex()
}
```

Synthetic Data Generation

Create a csv file with 90-100 rows and the following columns:

- Name: character string, each name should repeat for 7 rows. The names should be single word and funny.
- Day of week: character string, each name should have 7 weekdays corresponding to it
- Commute hours: numeric, each name should have different random values for each weekday. Within the same name, the random values should be close to each other, but within the entire name list the values should form a normal distribution. All values for this column should be between 30-90.

Name	Day of week	Commute hours
Giggles	Monday	30
Giggles	Tuesday	35
Giggles	Wednesday	35
Giggles	Thursday	41
Giggles	Friday	30
Giggles	Saturday	38
Giggles	Sunday	44
Boomer	Monday	73
Boomer	Tuesday	65
Boomer	Wednesday	66
Boomer	Thursday	70
Boomer	Friday	74
Boomer	Saturday	73
Boomer	Sunday	71
Snicker	Monday	66
Snicker	Tuesday	69
Snicker	Wednesday	58
Snicker	Thursday	73
Snicker	Friday	67
Snicker	Saturday	70
Snicker	Sunday	64

Readme/Documentation Generator

CUSTOMIZED

The screenshot shows a GitHub repository named "Demystifying_Shiny_modules" which is public. The repository has one branch ("main") and no tags. The repository was last updated by "deepshamenghani" with the commit "Update README.md" (commit hash: d839c94, last month). There are 6 commits in total. The repository contains several files and folders:

File/Folder	Description	Last Updated
data	Data generation	last month
modules	Data generation	last month
www	Update readme	3 months ago
.gitignore	Update readme	3 months ago
Demystifying_shiny_modules.Rproj	Update readme	3 months ago
Demystifying_shiny_modules_slides.pdf	Update readme	3 months ago
Demystifying_shiny_modules_slides.pptx	Update readme	3 months ago
README.md	Update README.md	last month
app_modular.R	Data generation	last month
app_modular_step_test.R	Update readme	3 months ago

Source: [Demystifying Shiny Modules](#)

Shiny Application Support Bot

COMMERCIAL

The screenshot shows a web application titled "Shiny Web Application Chatbot". At the top, there is a yellow button with the text "Enter OpenAI API Key to get started". Below this, a text input field is labeled "Please enter your question and press 'Send':". A blue "Send" button is positioned next to the input field. Below the input field, there is a small text area containing the word ".....". The entire application is presented within a white box with a gray shadow.

Source: [Incorporate an LLM Chatbot into Your Web Application](#)

The Good

Knowledge accessibility

Personalization

Creativity

Efficiency

The Bad

Garbage In/Out

Privacy

Dependency

Hallucination

Misinformation

The Ugly

Bias and fairness

Resource intensive

Cost

Ethical dilemma

Evolving regulations

Resources



[Bringing generative AI to RStudio with GitHub Copilot and chattr – Tom Mock](#)



[Incorporate an LLM Chatbot into Your Web Application with OpenAI, Python, and Shiny](#)



[Build a Chatbot by James Wade](#)



[Build a fine-tuned customer support FAQ bot with OpenAI](#)



When you have a hammer...

...everything looks like a nail.