

COURSEWARE

Text Generative AI courseware

based on
ChatGPT

Wahbe Rezek & Fabienne Mouris

Text Generative AI
Foundation courseware

Colophon

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Publisher about the Courseware

The Courseware was created by experts from the industry who served as the author(s) for this publication. The input for the material is based on existing publications and the experience and expertise of the author(s). The material has been revised by trainers who also have experience working with the material. Close attention was also paid to the key learning points to ensure what needs to be mastered.

The objective of the courseware is to provide maximum support to the trainer and to the student, during his or her training. The material has a modular structure and according to the author(s) has the highest success rate should the student opt for examination. The Courseware is also accredited for this reason, wherever applicable.

In order to satisfy the requirements for accreditation the material must meet certain quality standards. The structure, the use of certain terms, diagrams and references are all part of this accreditation. Additionally, the material must be made available to each student in order to obtain full accreditation. To optimally support the trainer and the participant of the training assignments, practice exams and results are provided with the material.

Direct reference to advised literature is also regularly covered in the sheets so that students can find additional information concerning a particular topic. The decision to leave out notes pages from the Courseware was to encourage students to take notes throughout the material.

Although the courseware is complete, the possibility that the trainer deviates from the structure of the sheets or chooses to not refer to all the sheets or commands does exist. The student always has the possibility to cover these topics and go through them on their own time. It is recommended to follow the structure of the courseware and publications for maximum exam preparation.

The courseware and the recommended literature are the perfect combination to learn and understand the theory.

-- Van Haren Publishing

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- IT and IT Management
- Architecture (Enterprise and IT)
- Business Management and
- Project Management

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Topics are (per domain):

IT and IT Management

ABC of ICT
ASL®
CATS CM®
CMMI®
COBIT®
e-CF
ISO/IEC 20000
ISO/IEC 27001/27002
ISPL
IT4IT®
IT-CMF™
IT Service CMM
ITIL®
MOF
MSF
SABSA
SAF
SIAM™
TRIM
VeriSM™

Enterprise Architecture

ArchiMate®
GEA®
Novius Architectuur
Methode
TOGAF®

Business Management

BABOK® Guide
BiSL® and BiSL® Next
BRMBOK™
BTF
EFQM
eSCM
IACCM
ISA-95
ISO 9000/9001
OPBOK
SixSigma
SOX
SqEME®

Project Management

A4-Projectmanagement
DSDM/Atern
ICB / NCB
ISO 21500
MINCE®
M_o_R®
MSP®
P3O®
PMBOK® Guide
Praxis®
PRINCE2®

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Self-Reflection of understanding Diagram

‘What you do not measure, you cannot control.’ – Tom Peters

Fill in this diagram to self-evaluate your understanding of the material. This is an evaluation of how well you know the material and how well you understand it. In order to pass the exam successfully you should be aiming to reach the higher end of Level 3. If you really want to become a pro, then you should be aiming for Level 4. Your overall level of understanding will naturally follow the learning curve. So, it’s important to keep track of where you are at each point of the training and address any areas of difficulty.

Based on where you are within the Self-Reflection of Understanding diagram you can evaluate the progress of your own training.

<i>Level of Understanding</i>	<i>Before Training (Pre-knowledge)</i>	<i>Training Part 1 (1st Half)</i>	<i>Training Part 2 (2nd Half)</i>	<i>After studying / reading the book</i>	<i>After exercises and the Practice exam</i>
<i>Level 4 I can explain the content and apply it .</i>					
<i>Level 3 I get it! I am right where I am supposed to be.</i>					<i>Ready for the exam!</i>
<i>Level 2 I almost have it but could use more practice.</i>					
<i>Level 1 I am learning but don’t quite get it yet.</i>					

(Self-Reflection of Understanding Diagram)

Write down the problem areas that you are still having difficulty with so that you can consolidate them yourself, or with your trainer. After you have had a look at these, then you should evaluate to see if you now have a better understanding of where you actually are on the learning curve.

Troubleshooting

Problem areas:

Topic:

Part 1

Part 2

You have gone through the book and studied.

You have answered the questions and done the practice exam.

Timetable

Part 1

- Introduction to AI
- Introduction to ChatGPT
- Prompt engineering
- Business field

Part 2

- Case study
- API's and plug-ins
- AI beyond ChatGPT
- Ethics

Welcome to

(Text)

Generative AI Ambassador Based on ChatGPT



COU SEWARE



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WHO AM I?

WHAT WILL YOU LEARN TODAY?



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Using Text Generative AI to make work easier and more fun

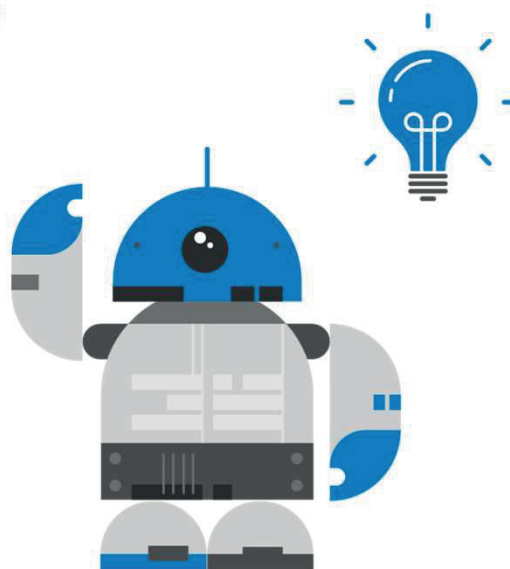


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What this course covers

- ✓ Introduction to AI
- ✓ Introduction to ChatGPT
- ✓ Prompt engineering
- ✓ Business field examples
- ✓ Case studies
- ✓ APIs & plug-ins
- ✓ Future developments and ethics



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About the certification

EDF Certified (Text) Generative AI Ambassador

By passing this exam, you will become a Certified Text Generative AI Ambassador and gain a competitive edge in your field.

The exam consists of 40 multiple-choice questions that cover the following topics:

- The basics of Text Generative AI and its language model
- The principles and practices of prompt engineering
- The business use cases and benefits of Text Generative AI
- The limitations and risks of Text Generative AI
- The ethical and legal aspects of Text Generative AI
- Hands-on experience of using ChatGPT for real-world problems



The Effective Data Foundation (EDF) is a not-for-profit collaboration that aims to promote the effective use of data.



INTRODUCTION TO AI



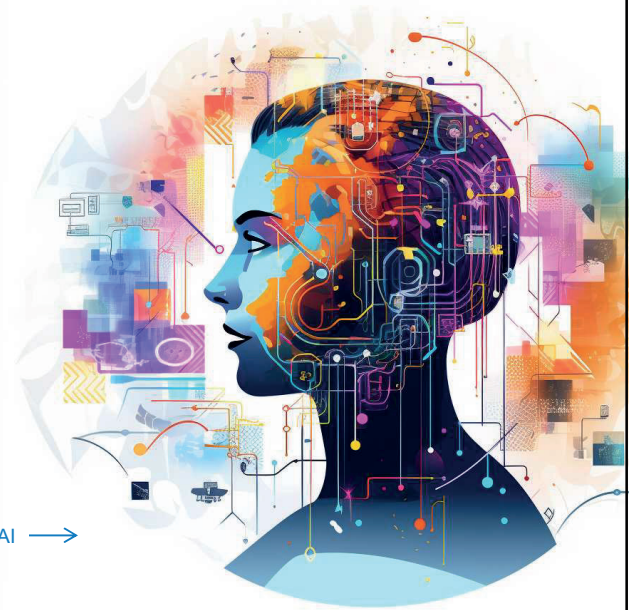
Artificial Intelligence (AI)

The capability of machines or computers to simulate human intelligence.

Examples of human intelligence:

- Problem-solving
- Understanding natural language
- Decision-making

Made with AI →



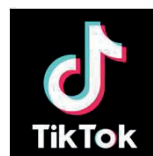
What AI
applications
come to your
mind?



Voice assistants

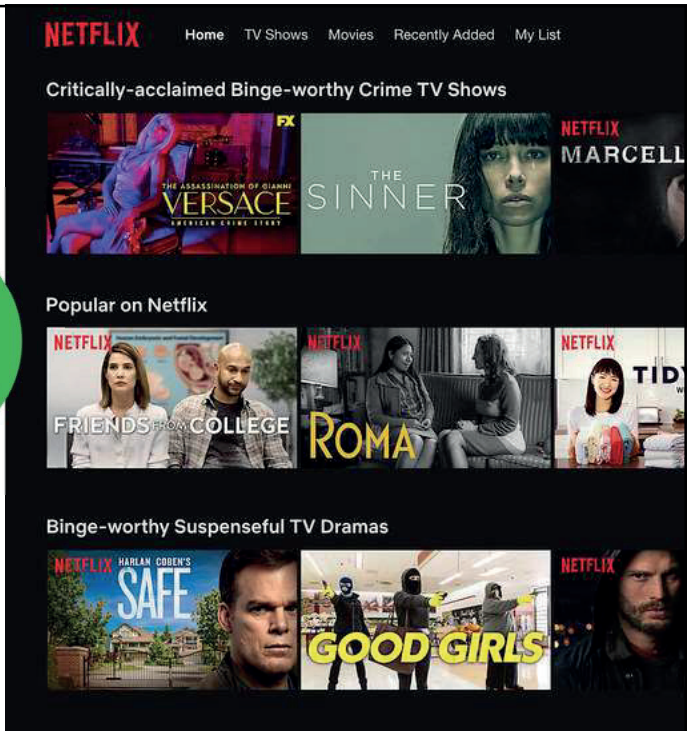


Social media





Streaming platforms



Facial Recognition



Adaptive opponent



Fraud detection

Other AI applications



AI =

The capability of machines or computers to simulate human intelligence.



AI =

The capability of machines or computers to simulate human intelligence by recognizing data patterns.



Narrow AI (weak)

It is designed and trained for a particular task

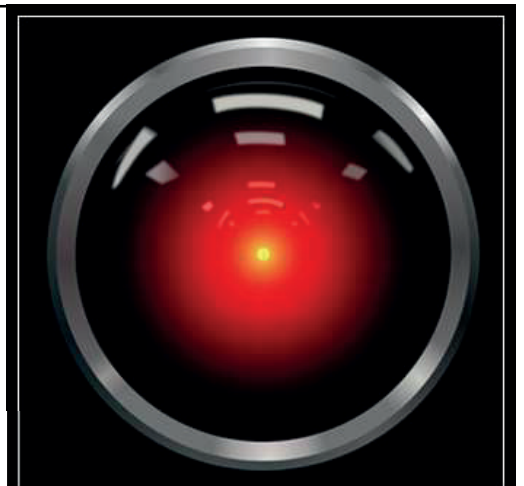
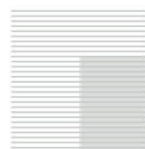
- Operates within specific boundaries
- Aims for high accuracy of the task



General AI (strong)

A theoretical system with generalized cognitive human abilities across different domains

- Operates within and across different domains
- Operates autonomously
- In the research stage



HAL9000
Is watching YOU



AI since 1955

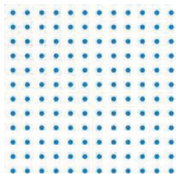
“An attempt will be made to find how to make machines use language, form abstractions and concepts, solve kinds of problems now reserved for humans, and improve themselves.”

- A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence (McCarthy et al, 1955)



Industrial revolution led by AI

- Efficiency and automation
- Innovation and complex problem-solving
- Research acceleration
- Enhanced product and services
- Economic impact



Artificial intelligence better than humans at spotting lung cancer

Researchers have used a deep-learning algorithm to detect lung cancer accurately from computed tomography scans. The results of the study indicate that artificial intelligence can outperform human evaluation of these scans.



By Ana Sandolu on May 20, 2019 — Fact checked by Isabel Godfrey

Latest news



Does a vegetarian diet increase the risk of bone fractures?



Sundowning in Alzheimer's: Light sensitivity may worsen late-day symptoms



Can the MIND diet or cutting daily calories improve cognition?



Pecans may have protective effects against obesity, diabetes

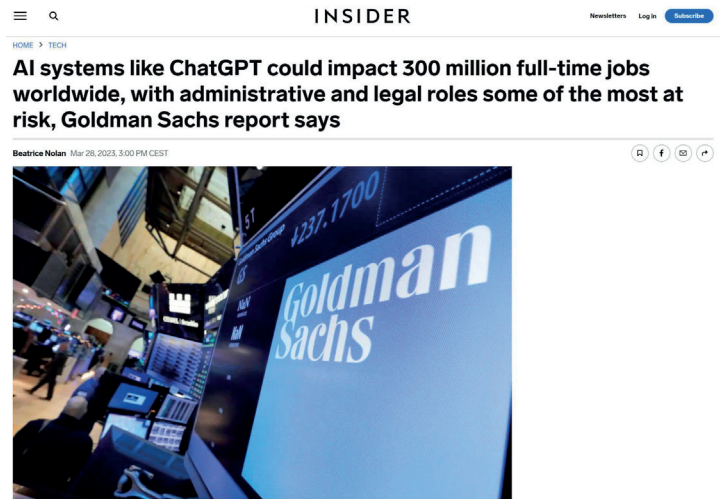
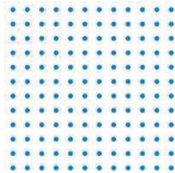


Could a bodybuilding supplement help stave off dementia?



Industrial revolution led by AI

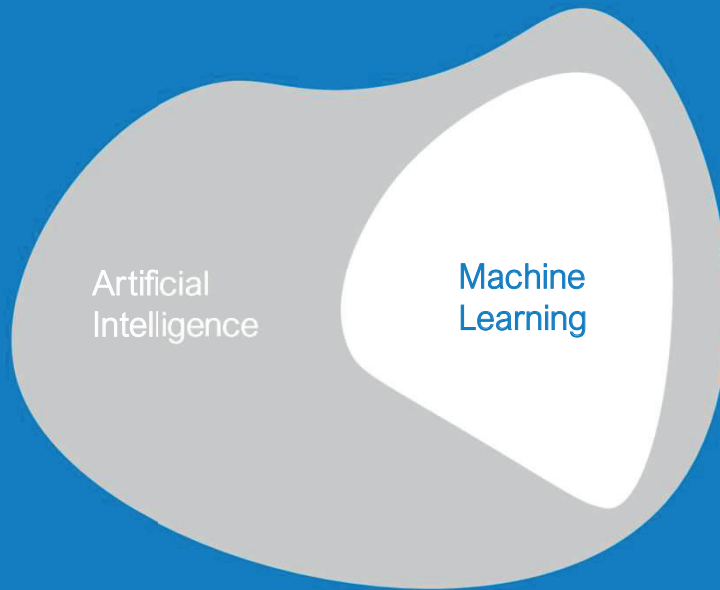
- Efficiency and automation
- Innovation and complex problem-solving
- Research acceleration
- Enhanced product and services
- Economic impact



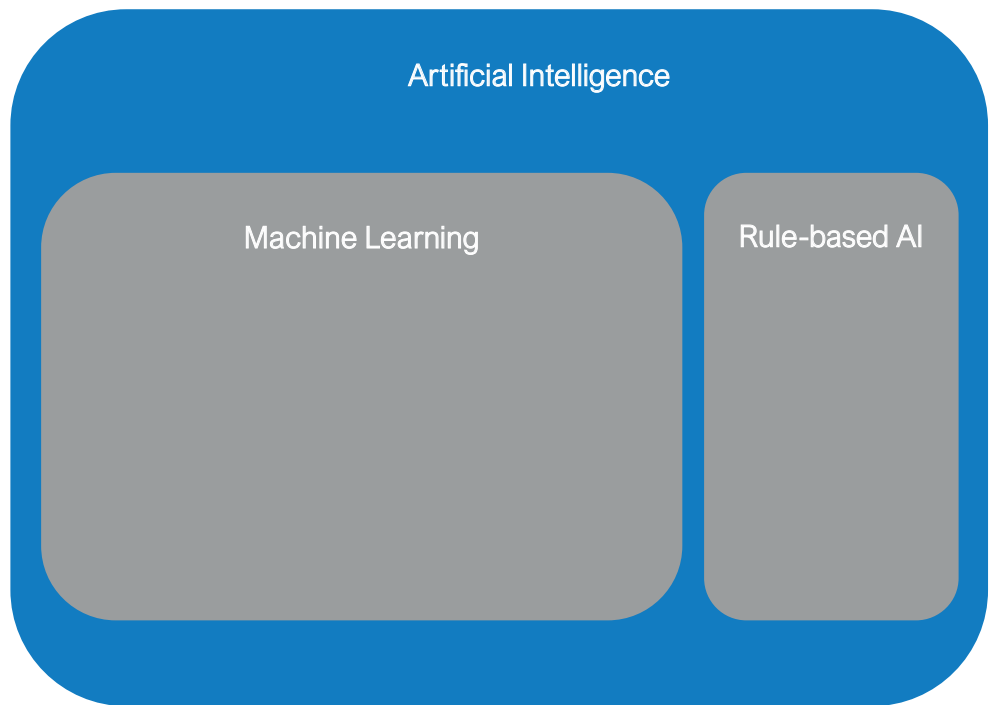
Industrial revolution led by AI

- Efficiency and automation
- Innovation and complex problem-solving
- Research acceleration
- Enhanced product and services
- Economic impact

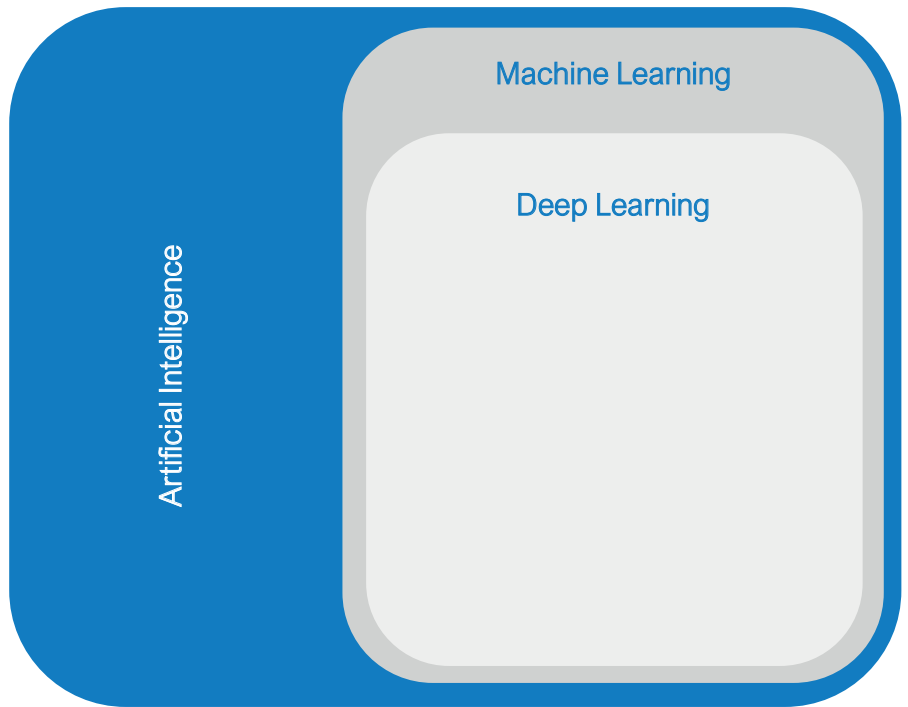




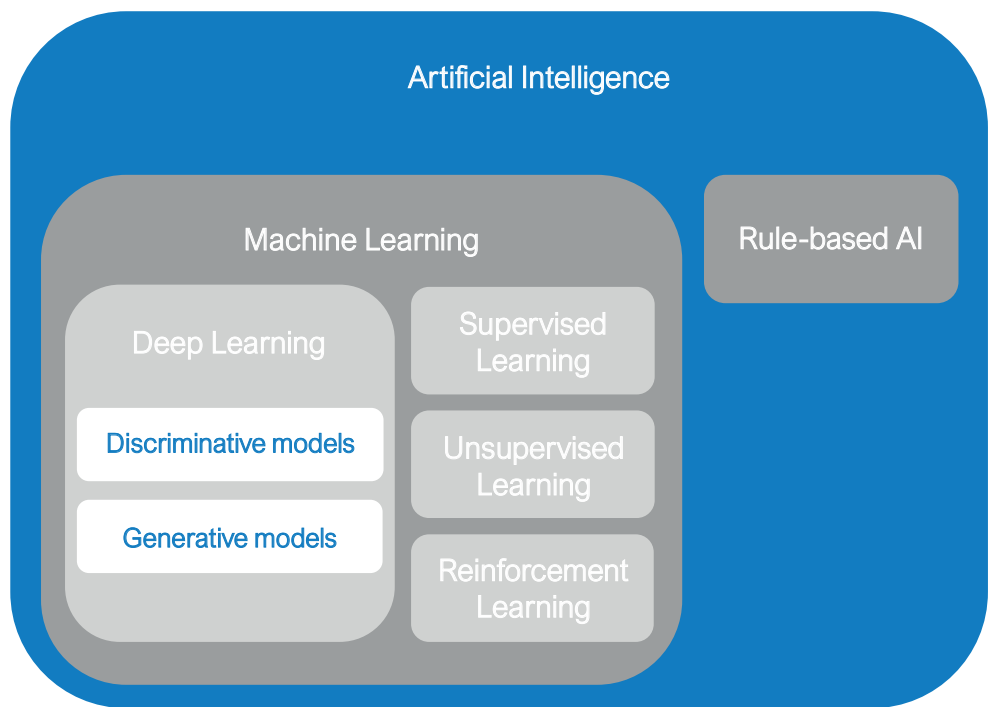
Techniques



The AI structure

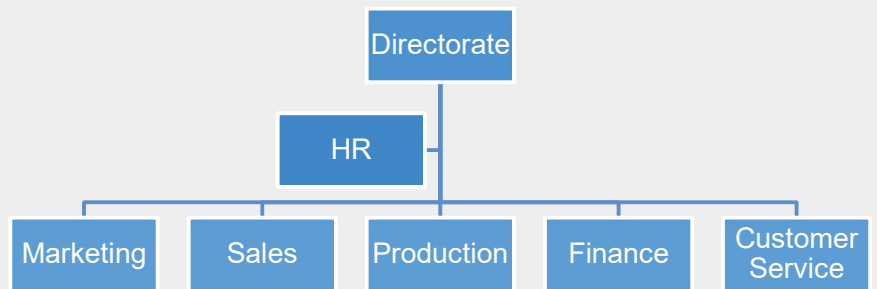


Techniques



Generative AI

Which business departments are most influenced by Generative AI?



INTRODUCTION TO CHATGPT



Generative AI

Generative AI creates new content based on what it has learned from existing content



Language



Visualization



Auditorial



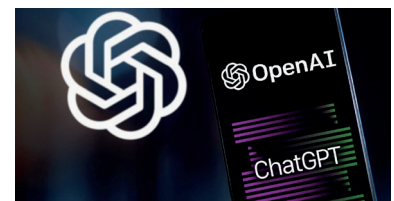
Generative AI explained by ChatGPT

What are tools/applications where generative AI is used?



Generative AI models have seen a rise in popularity and utilization across various domains. Here are some real-world applications where they are making a significant impact:

1. Image generation
 - Facial generation
 - Art creation
 - Style transfer
2. Text generation
 - Interactive stories & writing assistants
 - Chatbots



Generative AI explained by ChatGPT

What is ChatGPT? Explain it in two sentences to a high school student.



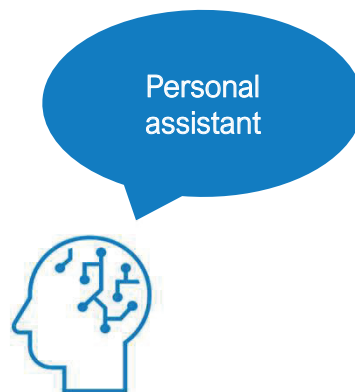
ChatGPT is like a super-advanced chatbot developed by OpenAI that can talk to you and answer questions by mimicking human-like text. Think of it as a computer program that's read a ton of books and websites and uses that knowledge to chat with you.



Capabilities

Conversational dialogue

- Text generation through creative writing
- Text completion and grammar correction
- Translation
- Text summarization and insights
- Coding & debugging
- Entertainment



GiggleWiggle Clothing

The pants that dance on their own

Ideal for parties, solo dance-offs, or simply amusing your cat

Comes with an accompanying app to customize your dance style

Disclaimer: GiggleWiggle™ is not responsible for any unintended moonwalks into busy streets. Always dance responsibly.



Generative AI explained by ChatGPT



Write an email to the manufacturer of our product GiggleWiggle pants and make an offer on the purchase price of the pants that can dance.



From: GiggleWiggle Clothing
To: Manufacturer
Subject: Request for Favorable Purchase Price - GiggleWiggle Dancing Pants

Dear Manufacturer,

I trust this email finds you well. I am writing on behalf of GiggleWiggle Clothing, and I am impressed by your innovative GiggleWiggle Dancing Pants.

We are keen to include this exciting product in our line and would like to propose a purchase price of [Your Offer] per unit for an initial order of [Quantity]. We believe that the unique features of these pants align well with our brand's image and customer preferences.

Your consideration of this offer is greatly appreciated. We are excited about the prospect of collaborating with you to bring more joy to our customers.

Best regards, GiggleWiggle Clothing



Text completion and Grammar correction

From: Intern
To: Manager
Subject: Launch event

Oh hai everyone! 🙋 🗣️

We got big newz! Our amazin' pants what dance, yes, dance on their own are hittin' the stage real soon! 🎆 Our inter, Bob, is workin' like a maniac to get all set up. The launch partee gonna be lit! 🚀 There be funky music, delish food, and of course, dancin' pants! Come join us for a wild ride on Fridae at 7PM. Donut miss it, or you'll regret it foreva! 🍩 🕒

Let's get our groove on and make this event a smashtastic one! See ya there! 🙌 🕺

Peace out,
Intern of the GiggleWiggle Team



Don't miss it, or you'll regret it forever!



Translation



Gerne würde ich 10 GiggleWiggle-Hosen bestellen: 3 in Blau und 7 in Lila. Von den blauen Hosen benötige ich 2 in Größe M und 1 in XL. Von den lila Hosen bräuchte ich 4 in Größe S und 3 in Größe M.

Translate



I would like to order 10 GiggleWiggle pants: 3 in blue and 7 in purple. For the blue pants, I need 2 in size M and 1 in XL. For the purple pants, I would need 4 in size S and 3 in size M.



Text summarization and insights



I would like to order 10 GiggleWiggle pants: 3 in blue and 7 in purple. For the blue pants, I need 2 in size M and 1 in XL. For the purple pants, I would need 4 in size S and 3 in size M.

Summarize



Customer Name	Color	Size	Quantity
Mrs. Fischer	Blue	M	2
Mrs. Fischer	Blue	XL	1
Mrs. Fischer	Purple	S	4
Mrs. Fischer	Purple	M	3



Coding & debugging



Write a Python code to visualize the order lines by importing the data from a CSV file. It should be clear how many products are ordered per color. Name the axes, make a legend and give the figure a title.



```
import pandas as pd
import matplotlib.pyplot as plt

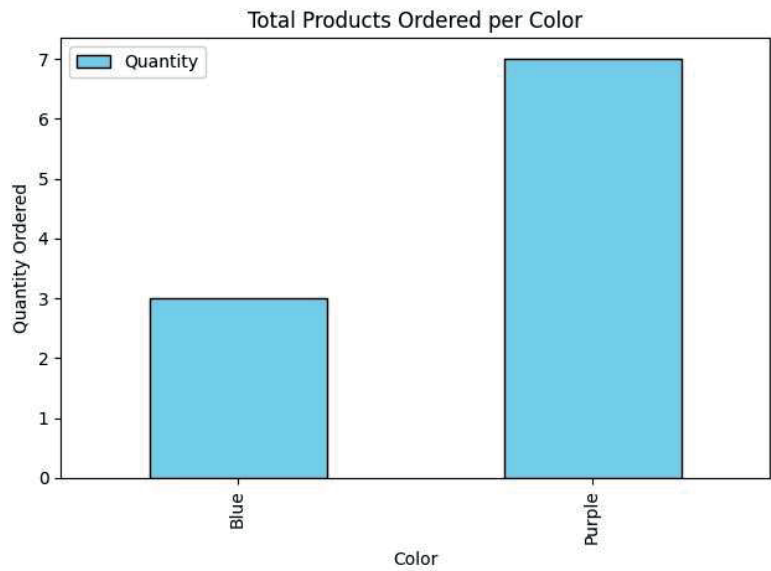
# Load data from CSV
df = pd.read_csv("order_data.csv")

# Group by 'Color' and sum the 'Quantity'
color_group = df.groupby('Color').sum()

# Plot
color_group['Quantity'].plot(kind='bar',
                              color='skyblue', edgecolor='black')
plt.title("Total Products Ordered per Color")
plt.ylabel("Quantity Ordered")
plt.xlabel("Color")
plt.legend(['Quantity'])
plt.tight_layout()
plt.show()
```



Coding & debugging



Entertainment

Tell me a joke



Why don't scientists trust atoms?

Because they make up everything!



Limitations & risks

- Potential for bias
- Lack of deep understanding
- No real-time updates
- Inconsistency
- Data privacy

Tech

Tay Tweets: Microsoft shuts down AI chatbot turned into a pro-Hitler racist troll in just 24 hours

The messages started out harmless, if bizarre, but have descended into outright racism — before the bot was shut down

Andrew Griffin • Thursday 24 March 2016 13:25 • Comments



Limitations & risks: Inconsistency

Examples of AI not machine learning:

1. Expert systems are computer systems that use a 'knowledge base' of facts (...)
2. Rule-based systems are similar to expert systems (...)

Examples of rule-based systems:

Rule-based systems, also known as expert systems, operate on a set of explicit rules. (...)



Limitations & risks

ChatGPT can show bias, doesn't truly understand, and may provide outdated or inconsistent information



The model isn't perfect and it's crucial for users to be aware of its limitations and potential bias

Review the output



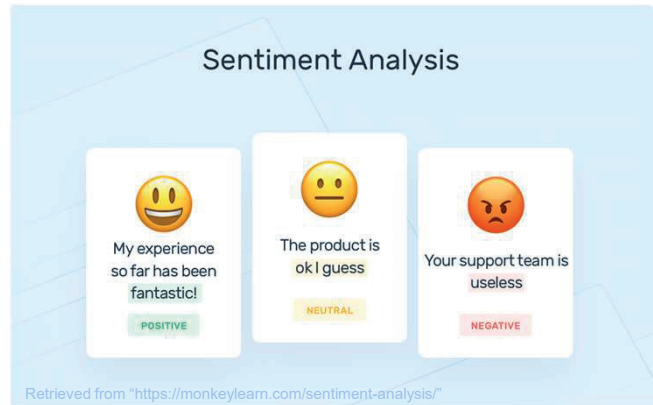
CHATGPT ARCHITECTURE



Text analysis

Natural Language Processing (NLP)

- Understand
- Interpret



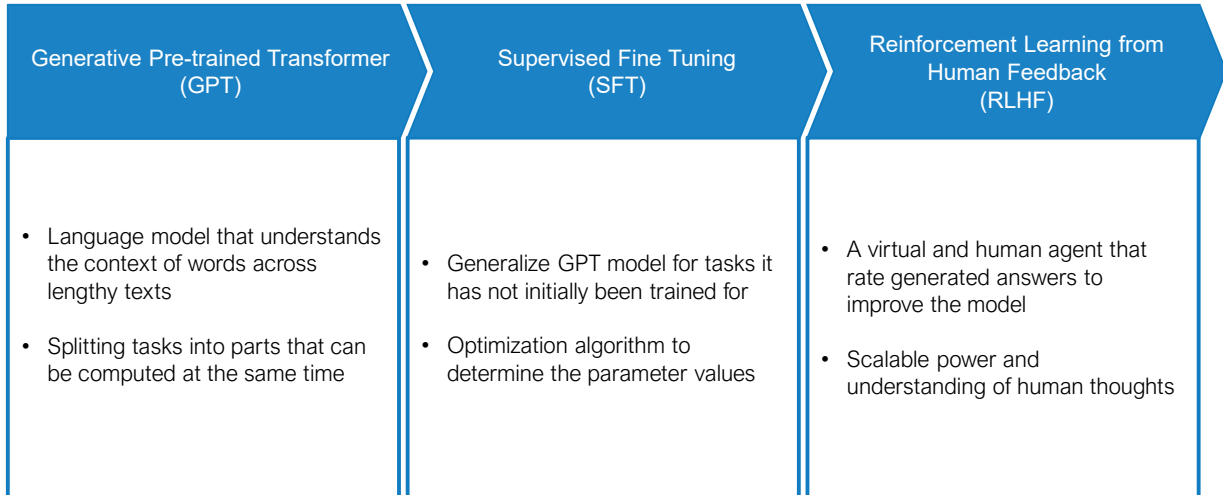
Text Generative AI

Large Language Models (LLM)

- Large training data set
- Shared characteristics of human languages
- Pre-training and fine-tuning

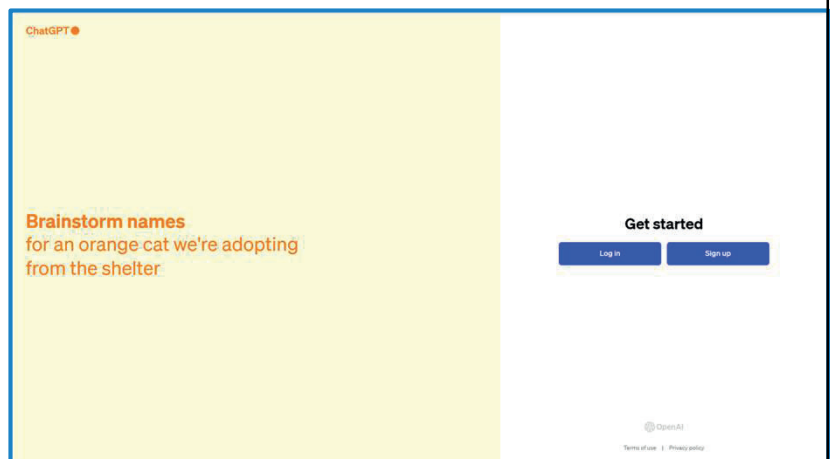


Structure of a LLM - ChatGPT



Sign up for ChatGPT

1. Navigate to <https://chat.openai.com/>
2. Click sign up
3. Enter your email or continue with Google, Microsoft or Apple
4. Verify your account via email

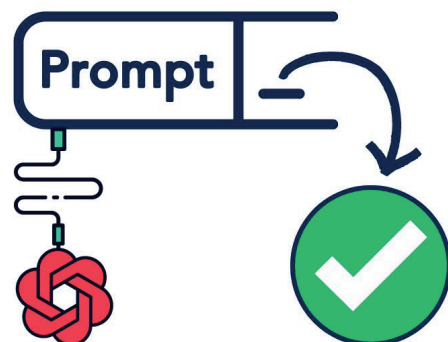


PROMPT ENGINEERING



What is a prompt?

A text describing the task that an AI should perform



Be clear, concise and provide context

Tips and tricks on first use

- Be nice
- Ask follow-up questions
- Format the output
- Require or change writing style
- Provide context



Recall: Capabilities

Personal Assistant

