

# Simplifying AI Complexity: Unmasking the conspiracy!

Gentle introduction to Generative AI for all to  
understand and empower

@ JavaCro2024

13. - 16. 10. 2024.

Rovinj/Hrvatska

# Kako pojednostaviti AI kompleksnost: Razotkrivanje konspiracije!

**Postepen uvod u Generative AI za sve kako bi  
razumeli i osposobili se za budućnost**

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it consultant @NovaCode



Accomplished individual with a strong background in Java (20+ yrs in IT business). Goal oriented, analytical and sharp individual with a lot of energy. Strong will to spread inspiration among his co-workers. Coming from city of Novi Sad, one of the biggest IT centres in Serbia, Aleksandar has been working in various environments. Professional career started as desktop developer (Delphi IDE) and joined one international company in 2007. with its headquarters in Amsterdam. Primary focus were various kinds of server-side systems and web applications. As from 2015. actively learning and helping clients to prepare and adopt for the Cloud. In 2017. Joined Jatheon where he works nowadays as Software Architect & Director of Engineering (DoE). In the "off-working hours" father of two. Like to play table tennis.

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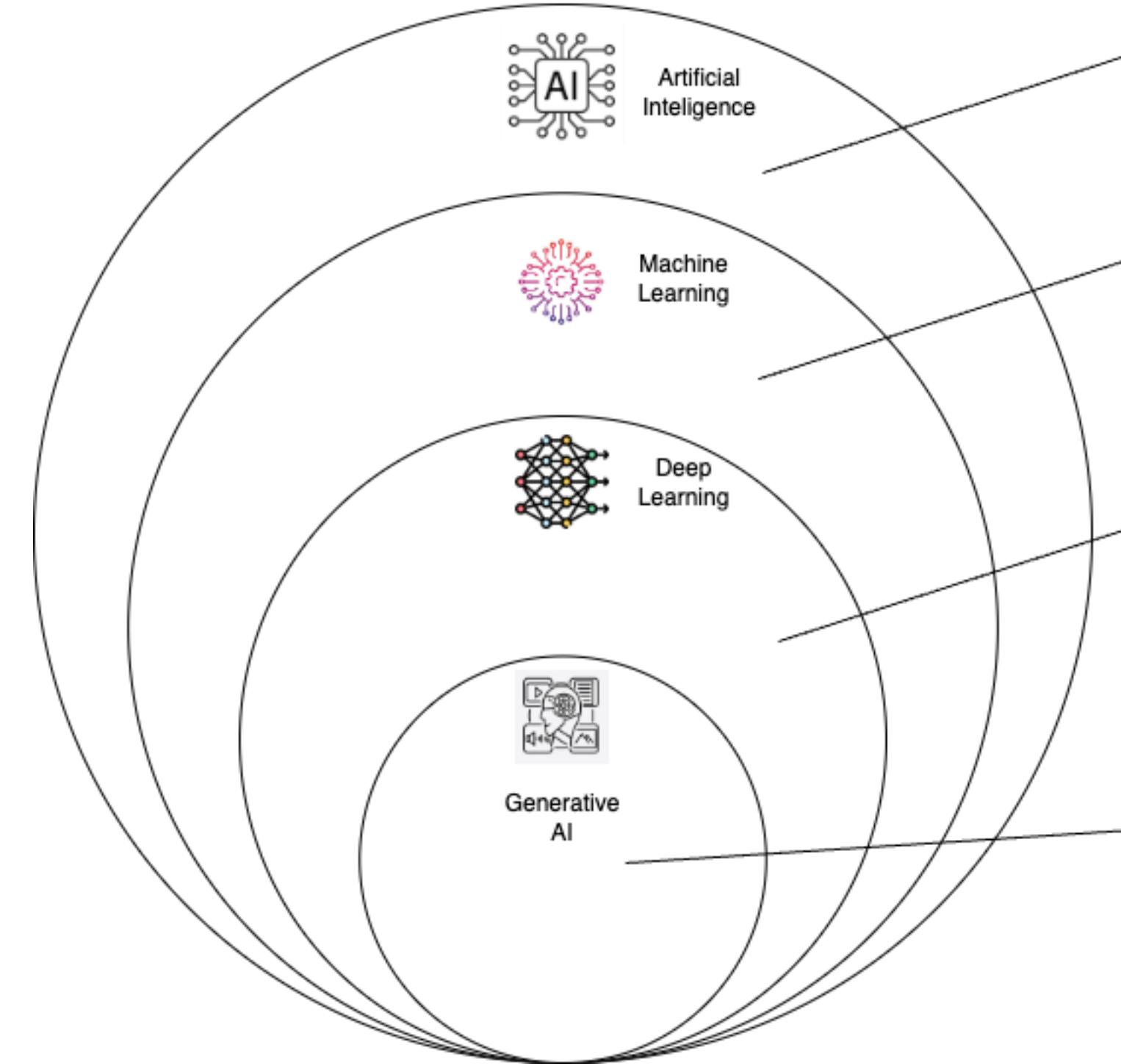


# Brief History of AI

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**It will be very brief :)**

# A little bit of history



## Artificial Intelligence (AI)

science discipline, branch of computer science, that deals with the creation and development of machines that think and act like humans.

## Machine Learning (ML)

it is a system that trains a model from input data and then that trained model can make useful predictions from new or never before seen data. Learn without explicitly programming.

## Deep Learning (DL)

structure inspired by the human brain, mimicking the way that biological neurons signal to one another. Neural network with more than three hidden layers can be considered a deep learning algorithm

## Generative AI (GenAI)

artificial intelligence can generate different type of content: text, images, audio, video based on what has been learned from the existing content

# GenAI

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# Generative AI

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# LLMs

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# Large Language Models



# What is LLM?

# How LLM works?

# How LLM works? #2

# **"Attention is all you need" - Transformer architecture**

# Supervised Fine Tuning (SFT)

# Reinforcement Learning with Human Feedback (RLHF)

**HHH framework - Askell Year ??? (Honest, Helpful, Harmless)**

**Base Model + SFT + RLHF = GPT (generative pre-trained transformer model)**

# DEMO



LOADING...

# DEMO

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# Hype!

## Why everyone was surprised?



# Creativity

**Sta je bilo zacudjujuće?**

- Scalability (ant, rat, human parameters - drvo one grkinje), Speed
- Creativity (temperature)
- Steering it (child or early teenager)

# LLM

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# Practical Implications

# What is Intelligence?

**Ability to compress knowledge**

**Embeddings**

# Vectors

# VectorStore

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# Neural Networks #1

# Neural Networks #2

# RAG

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# Retrieval Augmented Generation

# What about the private documents?

**Documents that GPT never was able to train with?**

# DEMO

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# RAG #1 - architecture

# RAG #2 - architecture

# RAG #3 - architecture



# Diffusion Model

# Image #1

# Image #2

# Audio - Spectrogram #1

# Audio - Spectrogram #2

AI

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# Stuff to consider

# Koliko nam treba da obucimo LLM?

Novca

Vremena

Energije

# Da li je AI opasan? AI test

# Filozofske implikacije

# References:

**AAA**

<https://www.youtube.com/watch?v=AAA>

**BBB**

<https://www.youtube.com/watch?v=BBB>

# Conclusion & key takeaways

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# Thank You



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# Questions & Answers

# Thank You



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# ErgoCloud

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## Admin UI

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# Customer UI

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X Y Z



X Y Z

X Y Z

X Y Z

X Y Z #1

X Y Z

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# DEMO

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