

100xEngineers

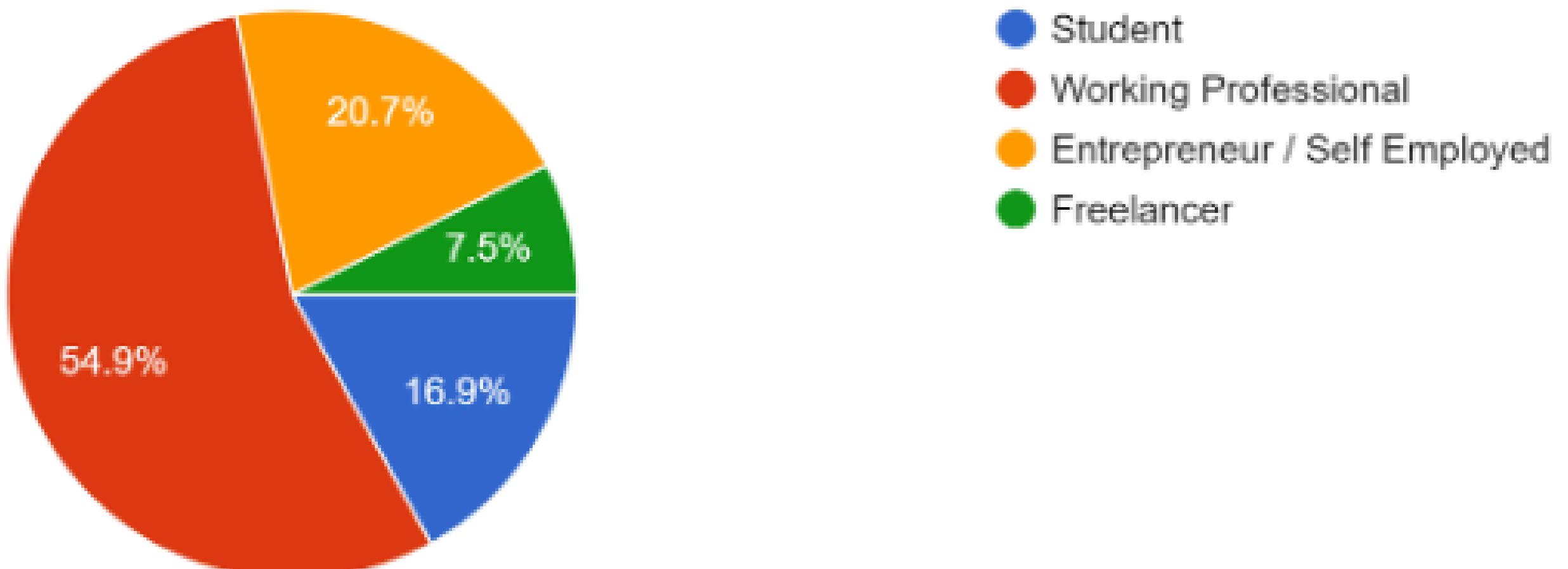
## Lecture 1

History, How to stay in the loop and Intro  
to Playground AI

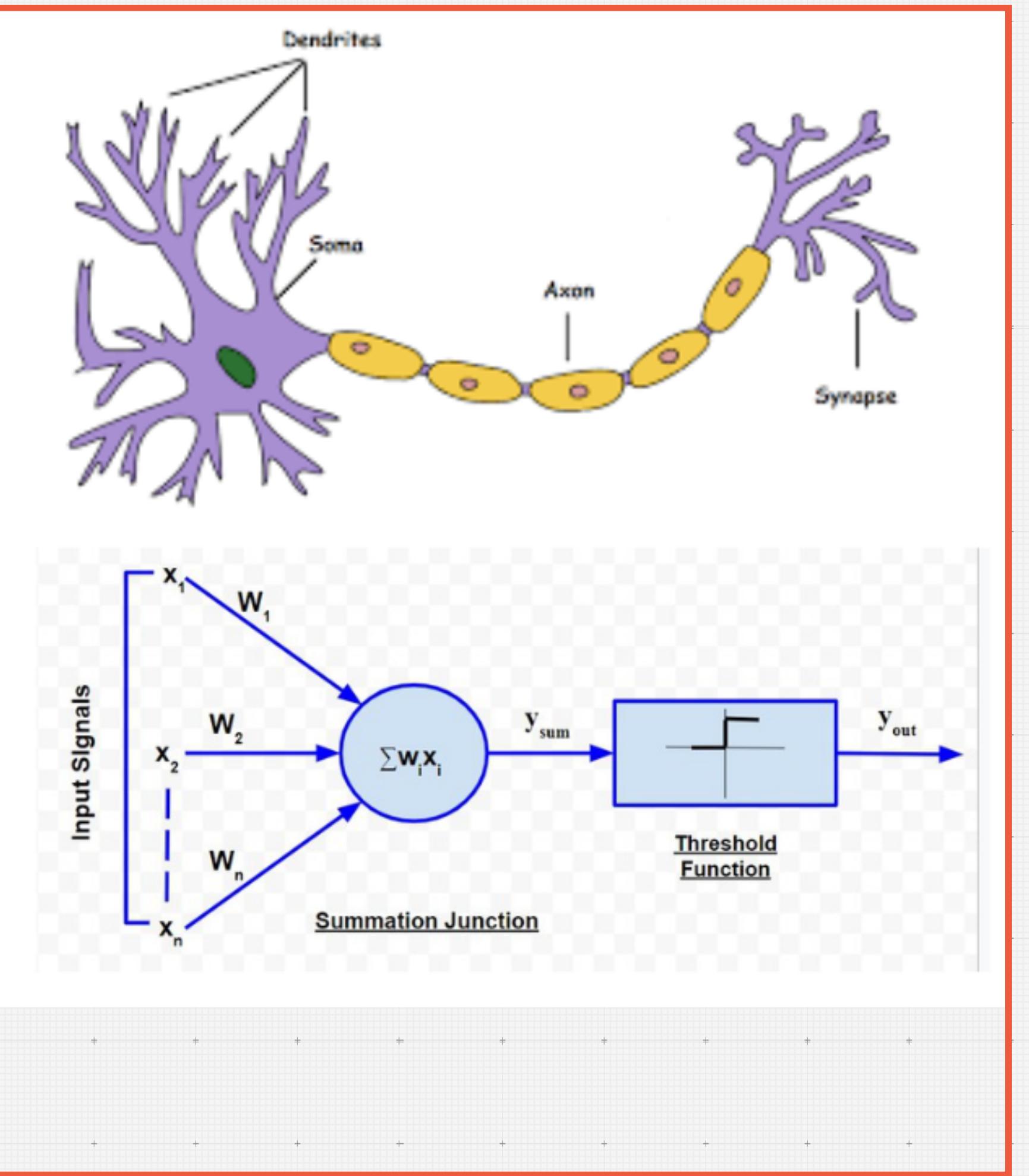
# What kinda wizards & witches do we have?

What is your current role?

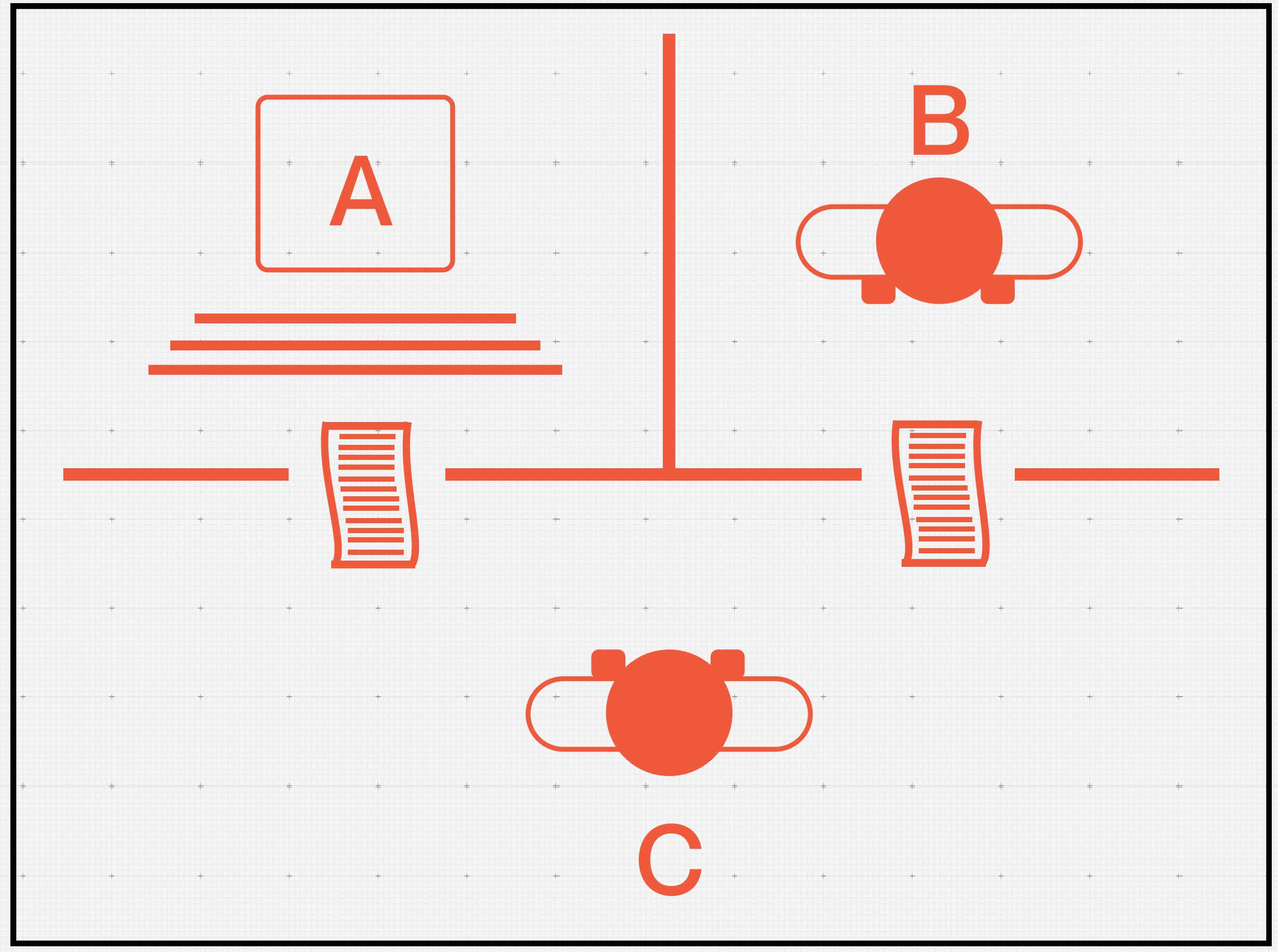
213 responses



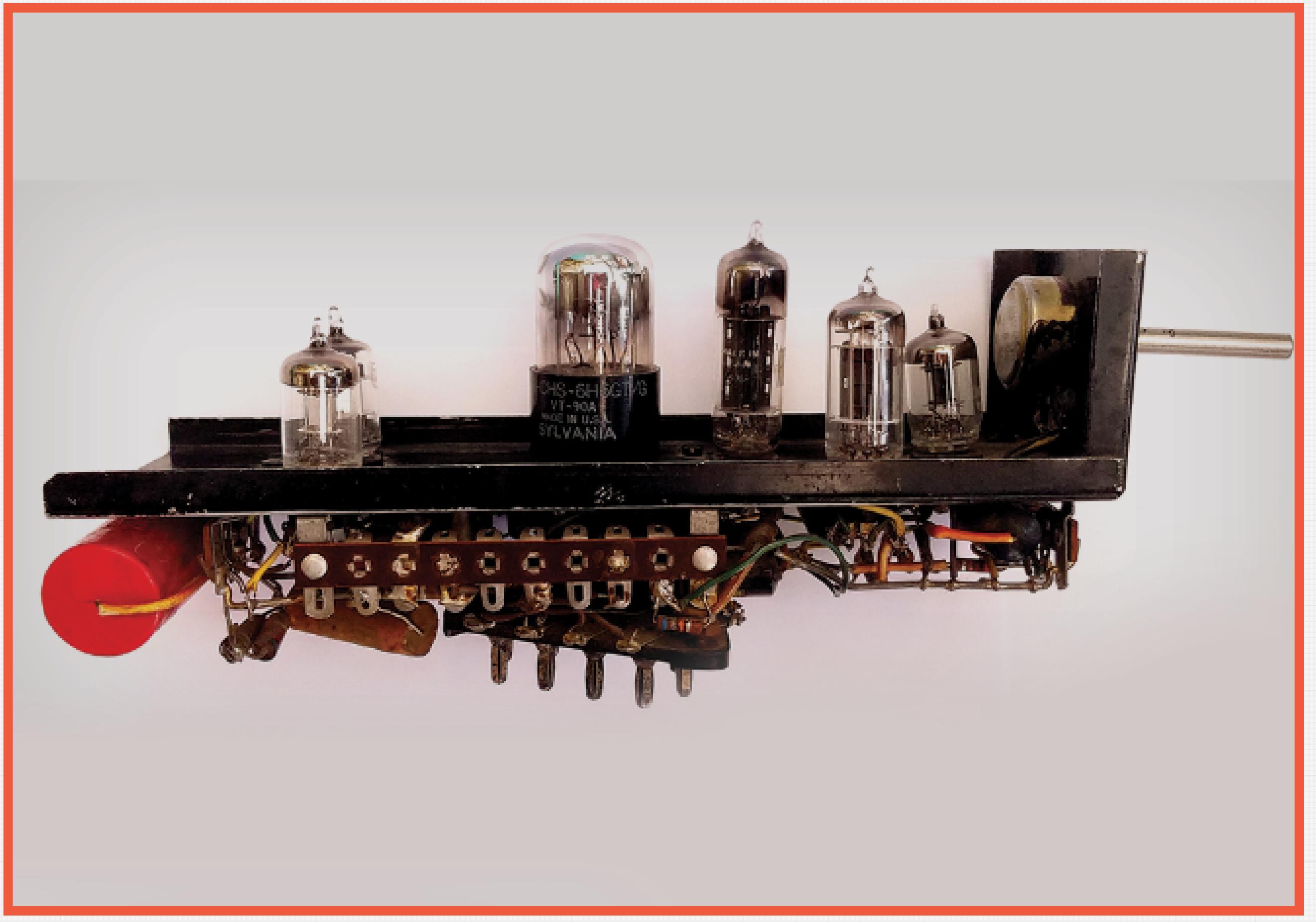
# 1943 : McCulloch-Pitts Neuron Model



# 1950 : Turing Test



# 1951: SNARC by Marvin Minsky



# 1956: Dartmouth Workshop

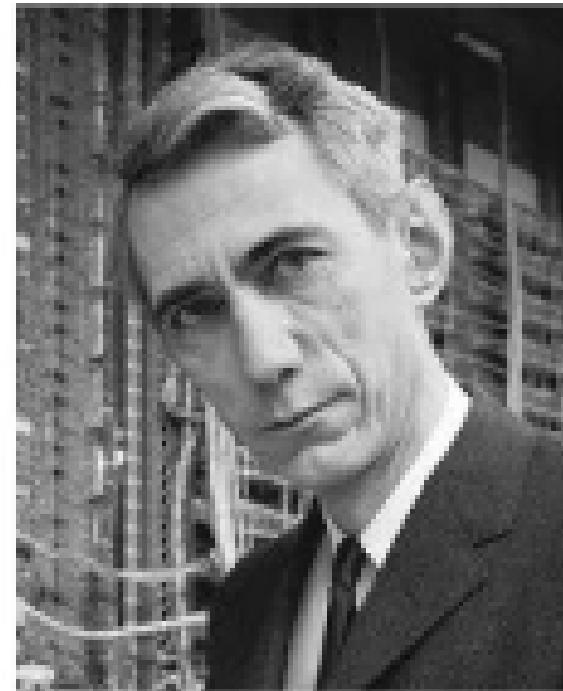
## 1956 Dartmouth Conference: The Founding Fathers of AI



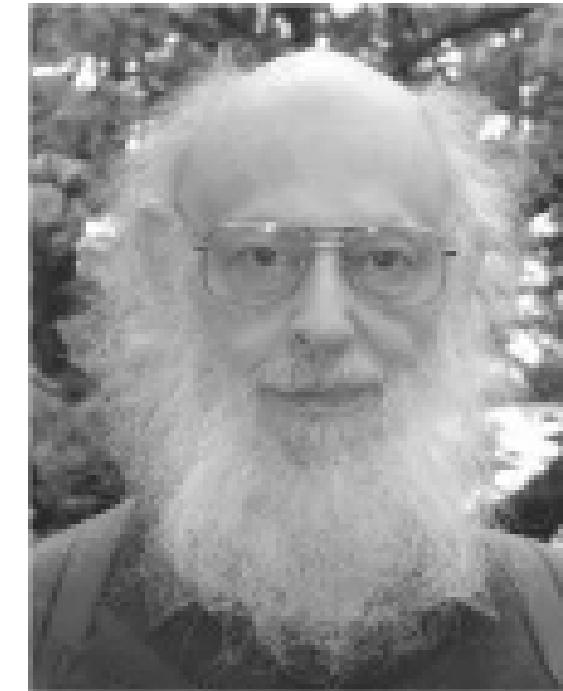
John MacCarthy



Marvin Minsky



Claude Shannon



Ray Solomonoff



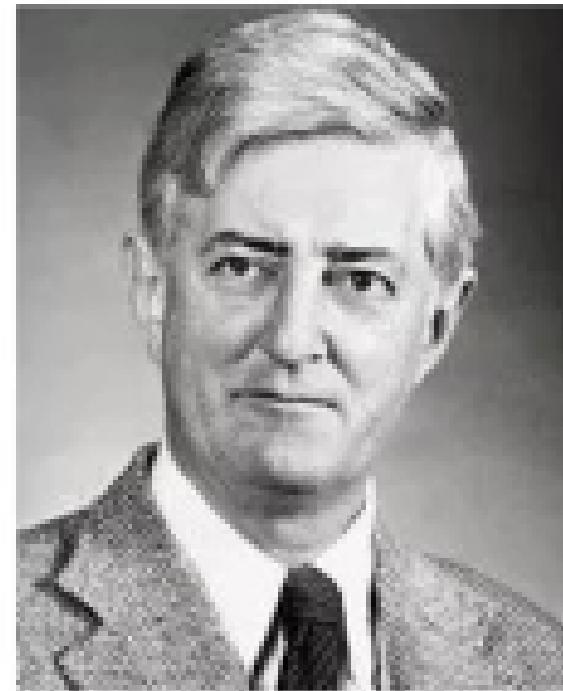
Alan Newell



Herbert Simon



Arthur Samuel



Oliver Selfridge



Nathaniel Rochester

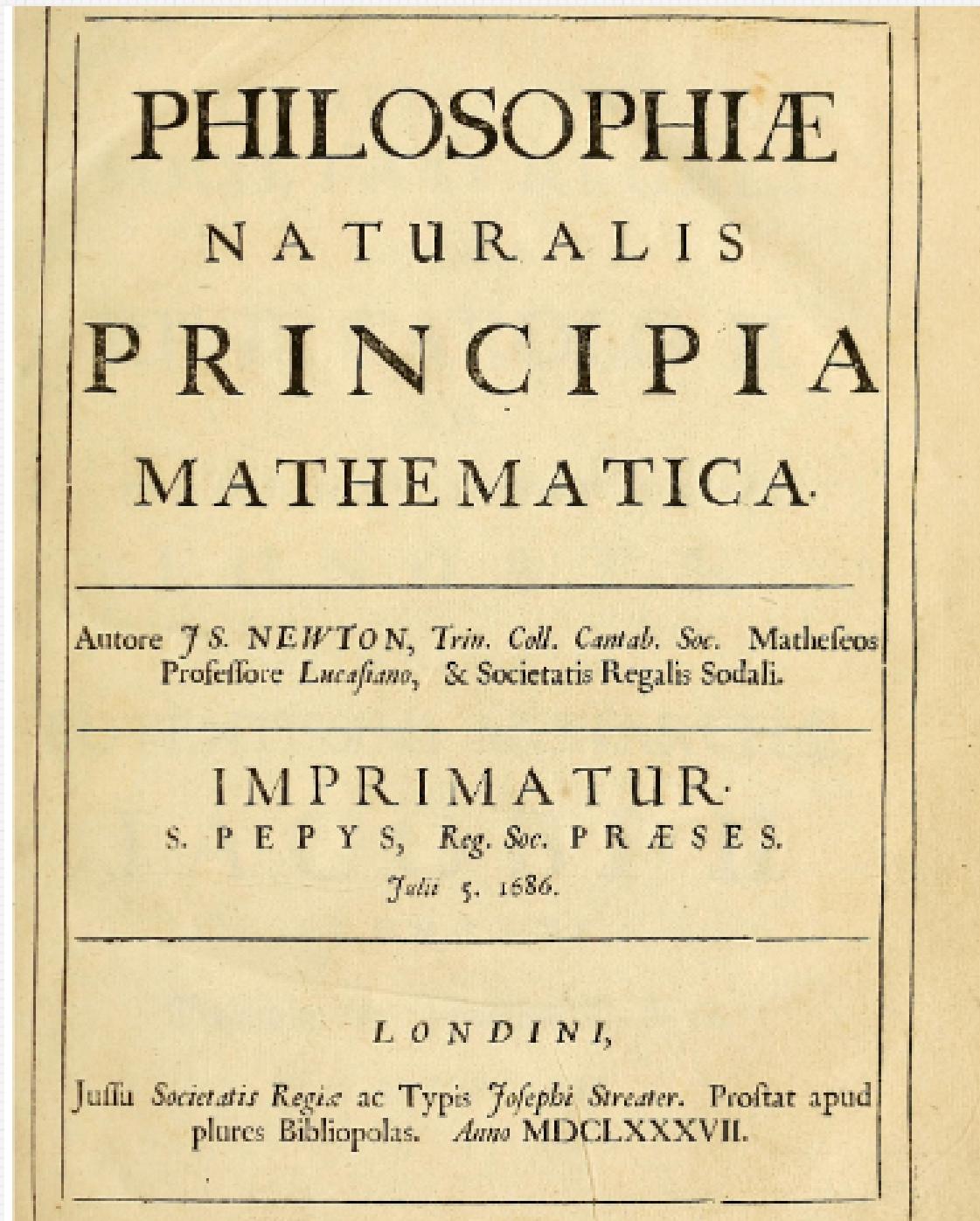


Trenchard More

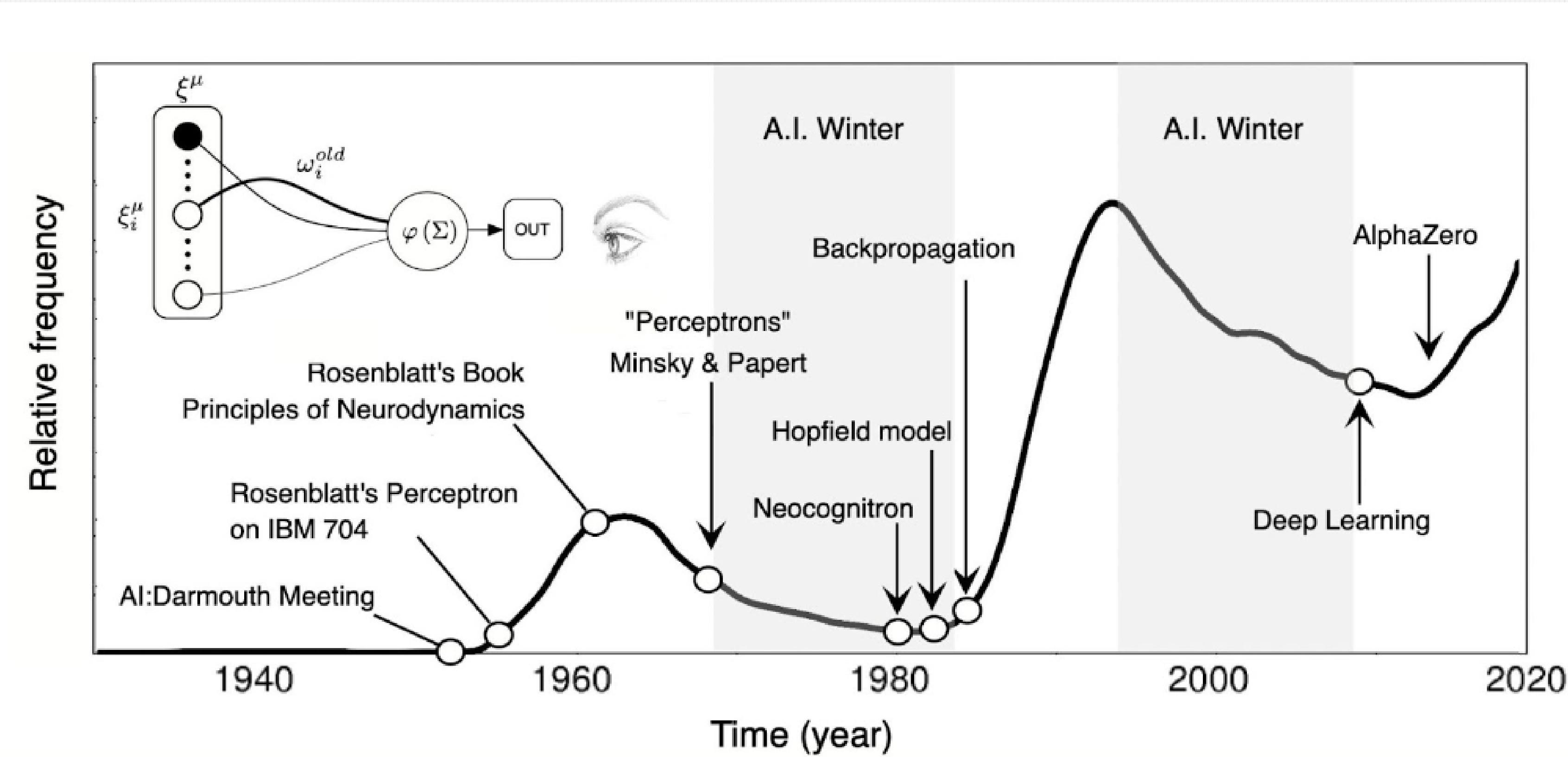
**1961: MIT AI Lab**



# 1961-74 : Math, Language, Chatbots & Robots



# The AI Winter



**1997 : Deep Blue**



# 2011 : Watson wins Jeopardy



**2015** : OpenAI founded with \$1B funding



# 2016 : DeepMind's AlphaGo



<p><b>Mar 7</b></p> <p><b>Salesforce announces Einstein GPT</b> (leveraging OpenAI's models), the first generative AI technology <b>for customer relationship management</b></p>	<p><b>Mar 14</b></p> <p><b>Anthropic introduces Claude</b>, an AI assistant trained using a method called "constitutional AI," which <b>aims to reduce the likelihood of harmful outputs</b></p>	<p><b>Mar 16</b></p> <p><b>Microsoft announces the integration of GPT-4 into its Office 365 suite</b>, potentially enabling broad productivity increases</p>	<p><b>Mar 30</b></p> <p><b>Bloomberg announces a LLM trained on financial data</b> to support natural-language tasks in the financial industry</p>
<p><b>2023</b></p>	<p><b>Mar 13</b></p> <p><b>OpenAI releases GPT-4</b>, which offers <b>significant improvements in accuracy</b> and hallucinations mitigation, claiming 40% improvement vs GPT-3.5</p>	<p><b>Mar 21</b></p> <p><b>Google releases Bard</b>, an AI chatbot based on the LaMDA family of LLMs</p>	<p><b>April 13</b></p> <p><b>Amazon announces Bedrock</b>, the first fully managed service that <b>makes models available via API from multiple providers</b> (eg, Anthropic) in addition to Amazon's own Titan LLMs</p>

Breakthroughs that once took years, now take days

# Why it's not **hype anymore?**

- Faster processing and compute
- Insane amounts of data for training
- Foundational models
- OpenSource ecosystem

# **3 Outcomes of GenAI Wizardry**

- How to stay updated
- How to finetune & build workflows
- How to productize

# Curriculum **Breakdown**

- Week 1** • History of GenAI, How to Research and Intro to Playground AI  
• How Diffusion Models work & Playground AI
- Week 2** • Prompt Engineering for various outputs  
• Intro to Stable Diffusion & Basic Parameters
- Week 3** • CivitAI, Checkpoints & SD Versions + txt2img, ControlNet & Scripts  
• img2img and Parameters + Extensions
- Week 4** • Intro to Finetuning with LoRAs using KohyaSS  
• LoRA Training
- Week 5** • Theory of finetuning & Data Prep  
• Dreambooth Training
- Week 6** • ComfyUI - The Basics  
• ComfyUI - Advanced Workflows
- Week 7** • ComfyUI Workflows + Fooocus  
• Voice Model Training

# Curriculum **Breakdown**

**Week 8** • PROJECT + CATCH-UP

**Week 9** • Intro to programming in Python  
• Python exercises

**Week 10** • Python for ML/AI  
• Gradio

**Week 11** • Streamlit  
• Building an API with flask server

**Week 12** • Intro to openAI APIs  
• Intro to Assistant APIs

**Week 13** • Project building feat. Agents  
• Intro to Hugging face: Models, Datasets, Spaces

**Week 14** • Inference APIs, Transformers lib  
• Project

**Week 15** • Project  
• Finetuning text-based model (Auto train)

**Week 16** • Llama factory  
• Intro to RAG

**Week 17** • Difference between RAG and Fine tuning  
• Intro to langchain

**Week 18** • building production ready RAG app  
• Intro to Vector DB and supabase

**Week 19** • Intro to replicate and deployment  
• Deploy custom model: Cog setup

**Week 20** • Pytorch  
• Connecting everything: Roadmap for where to go from here next

**Week 21** • CAPSTONE PROJECT

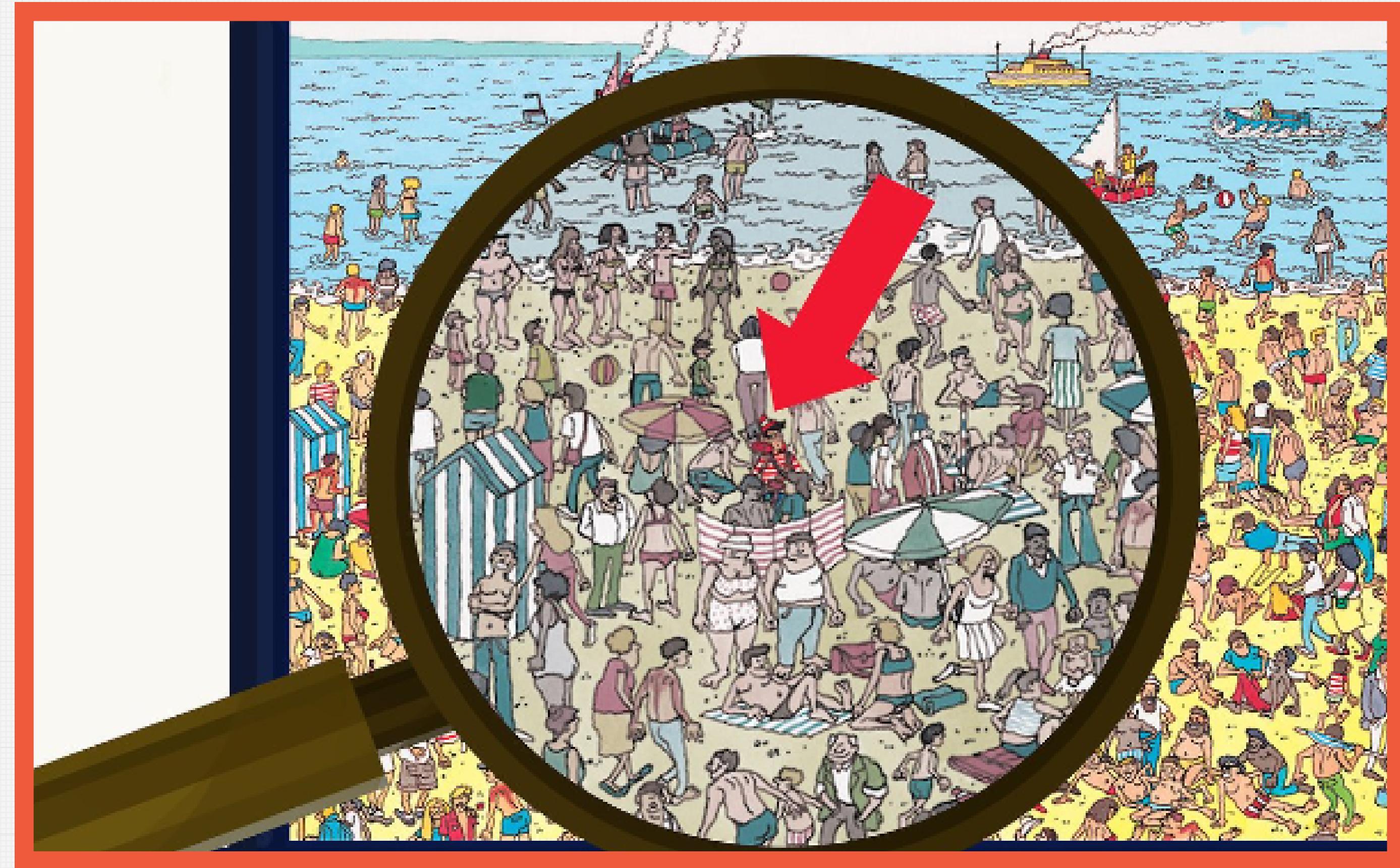
# Projects

- Playground AI Practice Prompt
- Practice + SD Exercises
- FaceSwap Engine
- Illusion Diffusion
- Interior Design Engine
- Product Design Engine
- Finetune a LoRA
- Finetune on Dreambooth
- Custom COmfy Workflows
- Animate Diff AI Fashion Generator
- Make your own AI Influencer Avatar
- Build a chat UI with gradio/JS
- Build your own AI portfolio or landing page for your products

## Must-Do's

- Rituals for research
- Hands-on practice
- Projects and Capstone

# How to stay **updated?**



# How to do research on **AI Models**?

- GitHub trending (<https://github.com/trending>) to find an Interesting repo to play and tweak around with.
- Arxiv.org for new Papers or check old papers which is already
- Website to find websites built with AI models as Base - <https://theresanaiforthat.com/>

# Twitter folks to **follow**

- <https://twitter.com/heyBarsee>
- <https://twitter.com/bilawalsidhu>
- [https://twitter.com/\\_akhaliq](https://twitter.com/_akhaliq)
- <https://twitter.com/mreflow>
- <https://twitter.com/omarsar0>
- [https://twitter.com/seb\\_ruder](https://twitter.com/seb_ruder)
- <https://twitter.com/karpathy>
- [//twitter.com/hardmaru](https://twitter.com/hardmaru)
- <https://twitter.com/ylecun>
- <https://twitter.com/jeremyphoward>
- <https://twitter.com/goodside>
- <https://twitter.com/emollick>

# Best sources for **News/articles?**

- <https://towardsdatascience.com/>
- <https://techxplore.com/machine-learning-ai-news/>
- <https://arxiv.org/list/cs.AI/recent>
- <https://stability.ai/news>
- <https://paperswithcode.com/latest>
- <https://www.emergentmind.com/>
- <https://www.catalyzex.com/>
- <https://www.deeplearning.ai/the-batch/>

# Where to test out the applications of these models?

- **Huggingface** : <https://huggingface.co/>
- **Replicate** : <https://replicate.com/>
- **Civitai** : <https://civitai.com/>
- **Gooey** : <https://gooey.ai/>

## Podcasts:

- <https://www.youtube.com/channel/UCSHZKyawb77ixDdsGog4iWA>
- <https://www.youtube.com/user/keeroyz>

# Datasets, models etc

- **Kaggle** : <https://www.kaggle.com/datasets?search=gym+exercises>
- **Huggingface** : <https://huggingface.co/>
- **Replicate** : <https://replicate.com/>
- **Civitai** : <https://civitai.com/>
- **StabilityAI**: <https://replicate.com/stability-ai/sdxl/api>
- **Gooey** : <https://gooey.ai/>
- **PlayGroundAI** : <https://playgroundai.com/>

# The Ritual

- Every Friday lecture begins with AI news of the week
- Whenever you come across something interesting, post on Discord. Try doing 1 post a day.
- Scroll through twitter at least for 20-30 mins during breaks/commute

**Playground AI**

# QnA