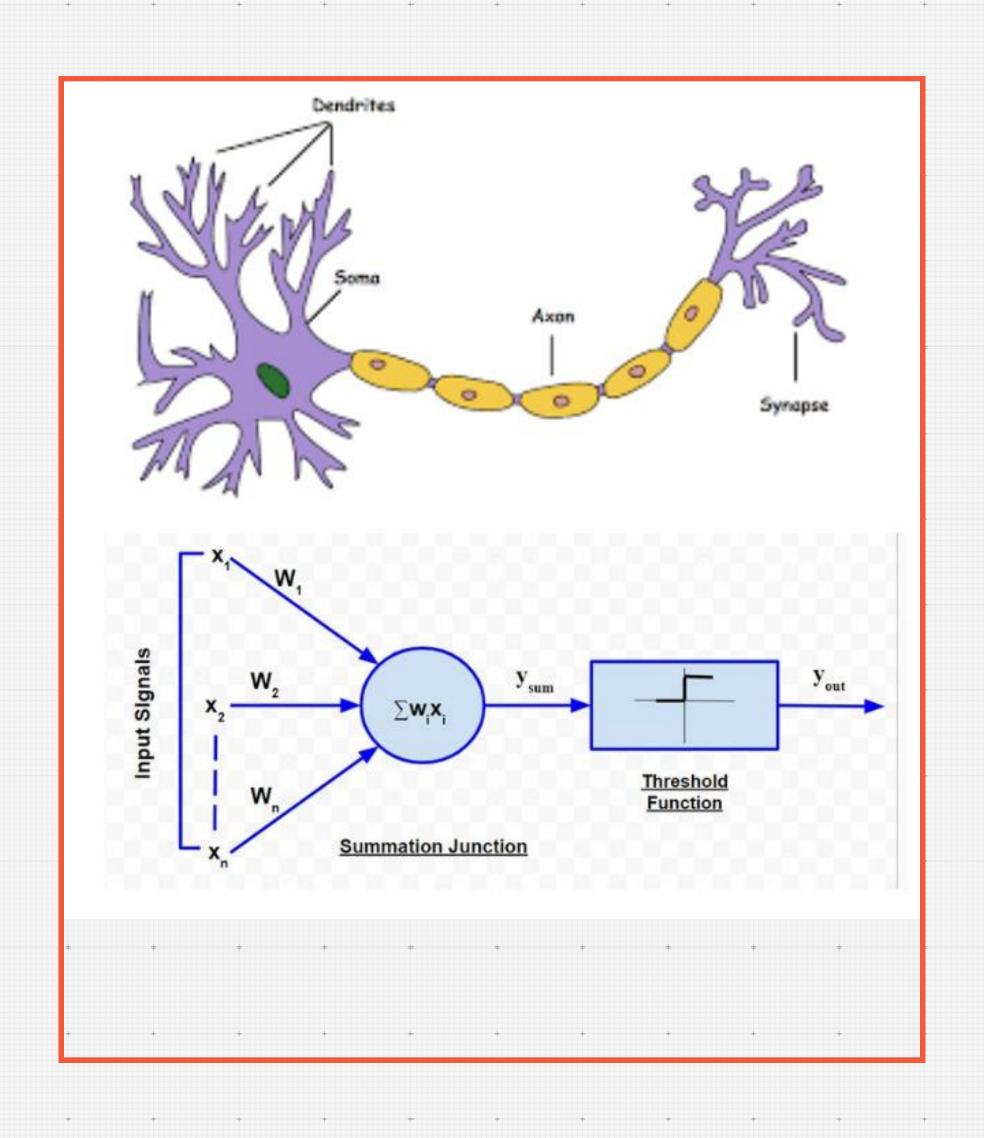
100xEngineers

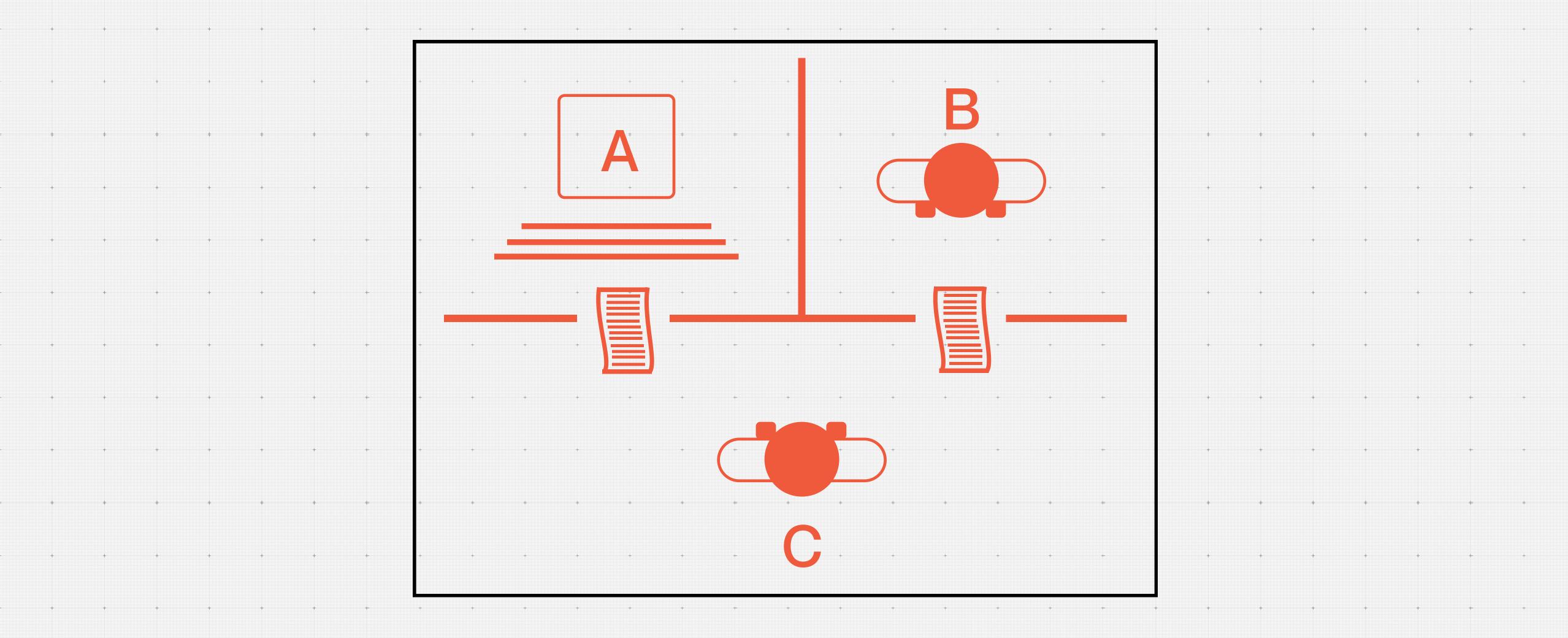
Lecture 1

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

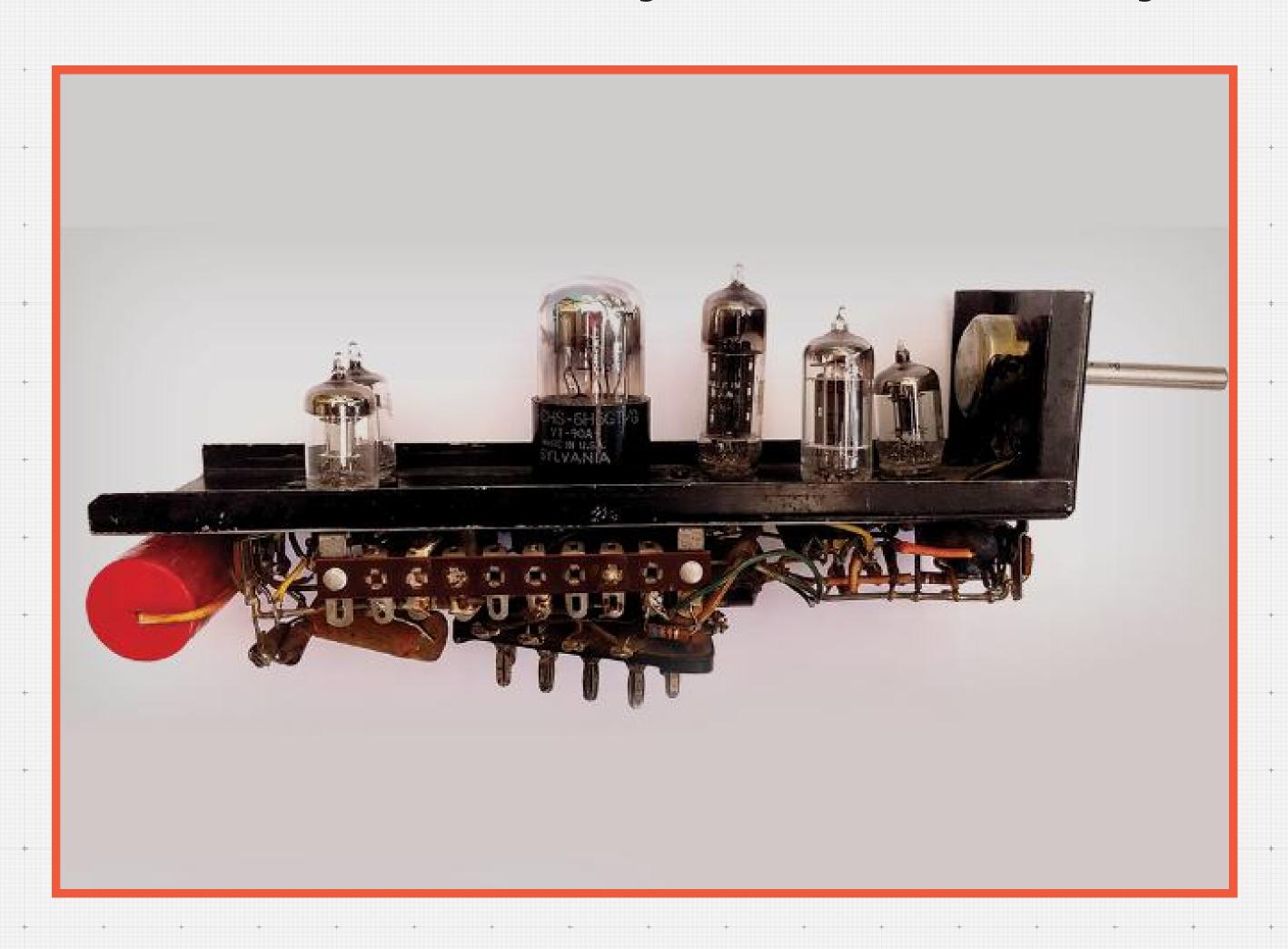
1943: McCulloch-Pitts Neuron Model



1950: Turing Test



1951: SNARC by Marvin Minsky



1956: Dartmouth Workshop

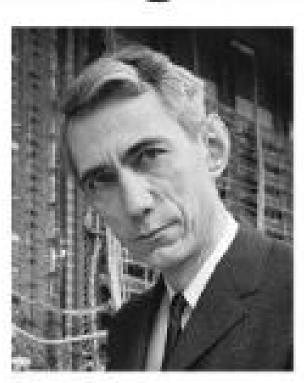
1956 Dartmouth Conference: The Founding Fathers of AI



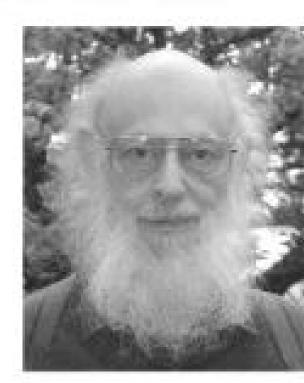
John MacCarthy



Marvin Minsky



Claude Shannon



Ray Solomonoff



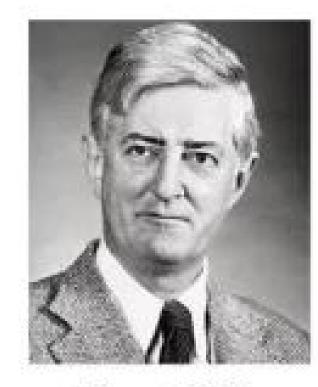
Alan Newell



Herbert Simon



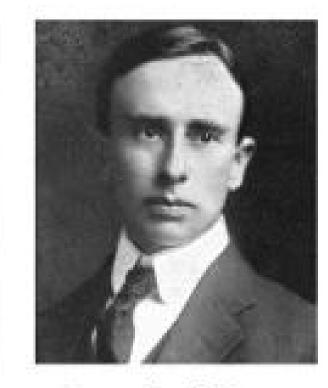
Arthur Samuel



Oliver Selfridge

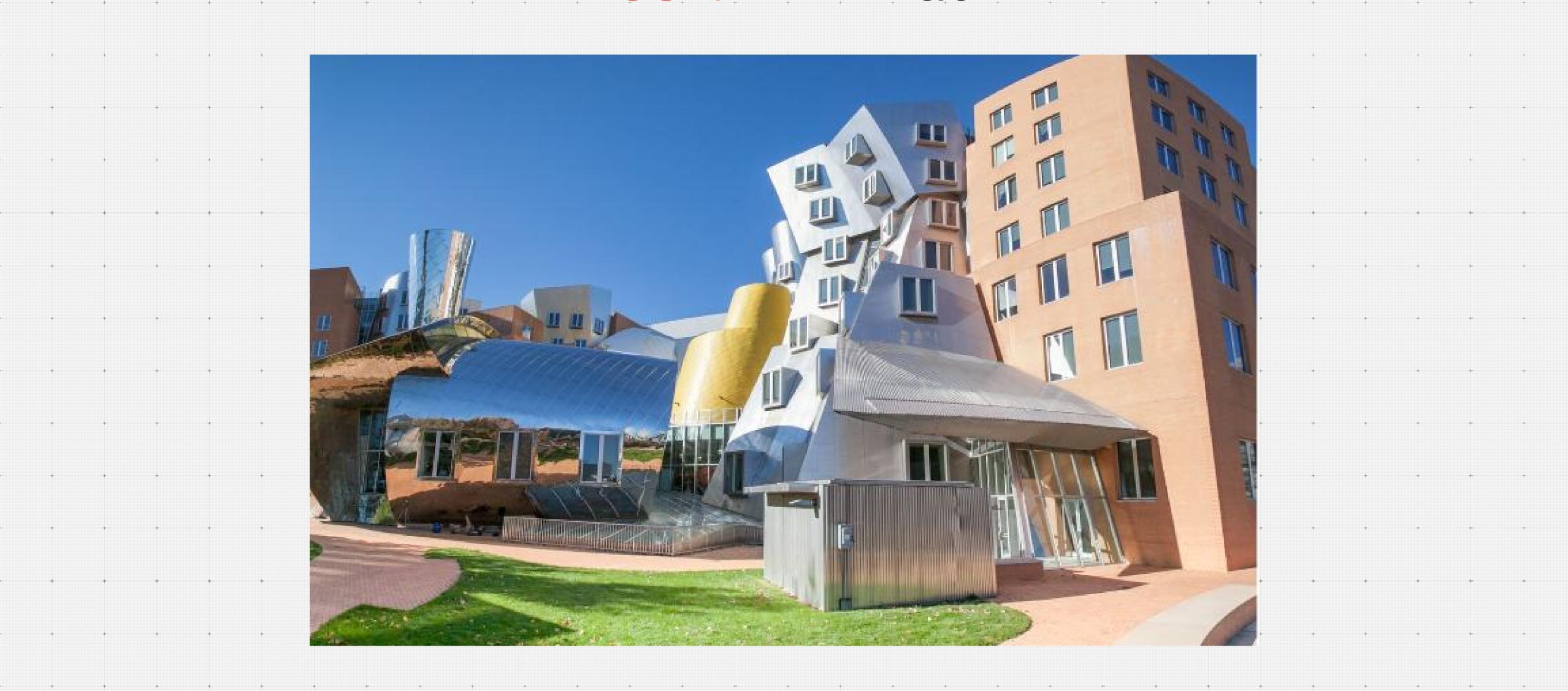


Nathaniel Rochester



Trenchard More

1961: MIT AI Lab



1961-74: Math, Language, Chatbots & Robots

PHILOSOPHIÆ

NATURALIS

PRINCIPIA

MATHEMATICA

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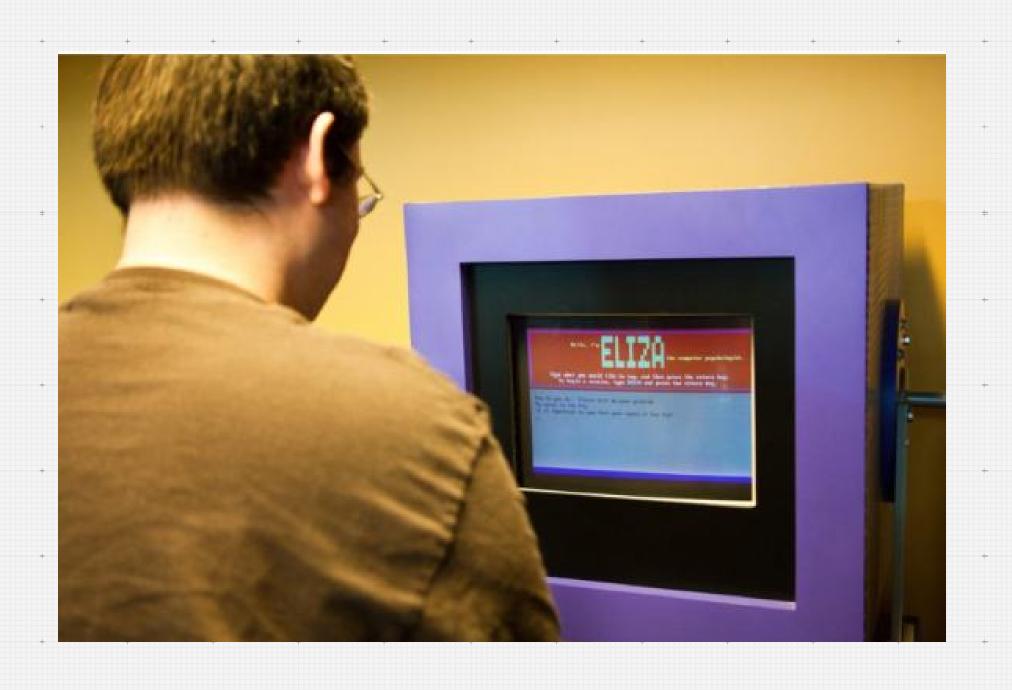
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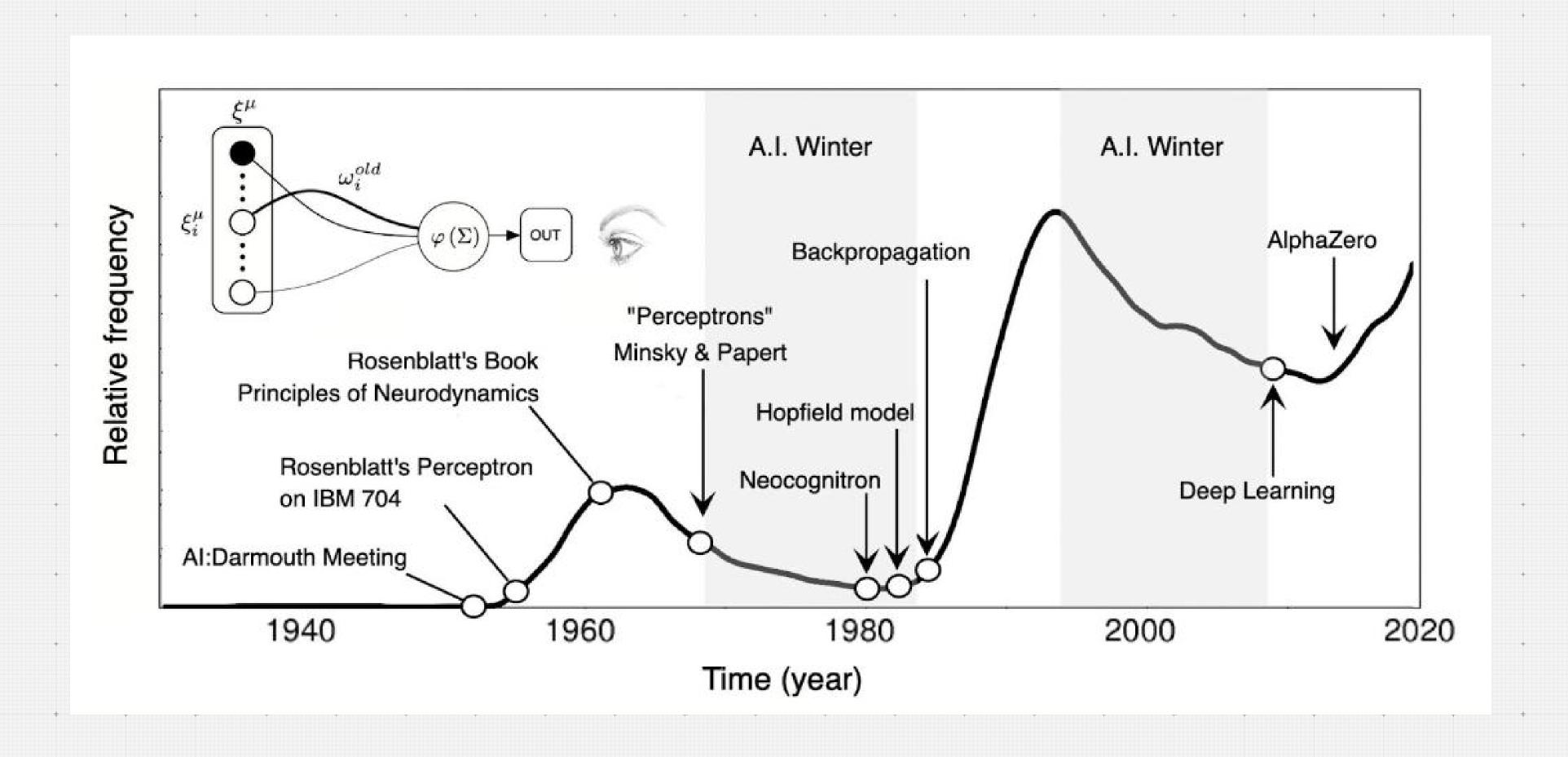
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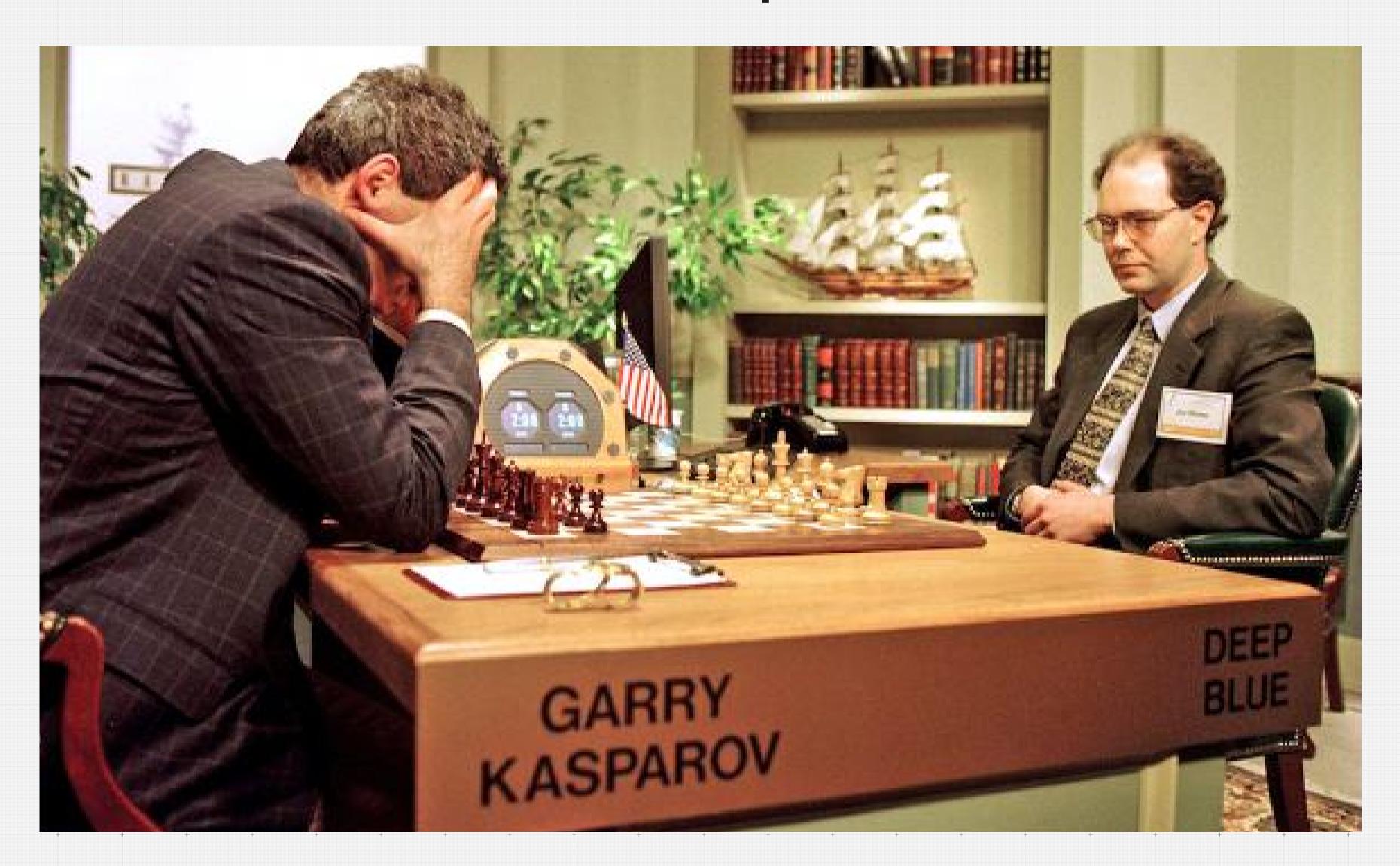




The Al Winter



1997: Deep Blue



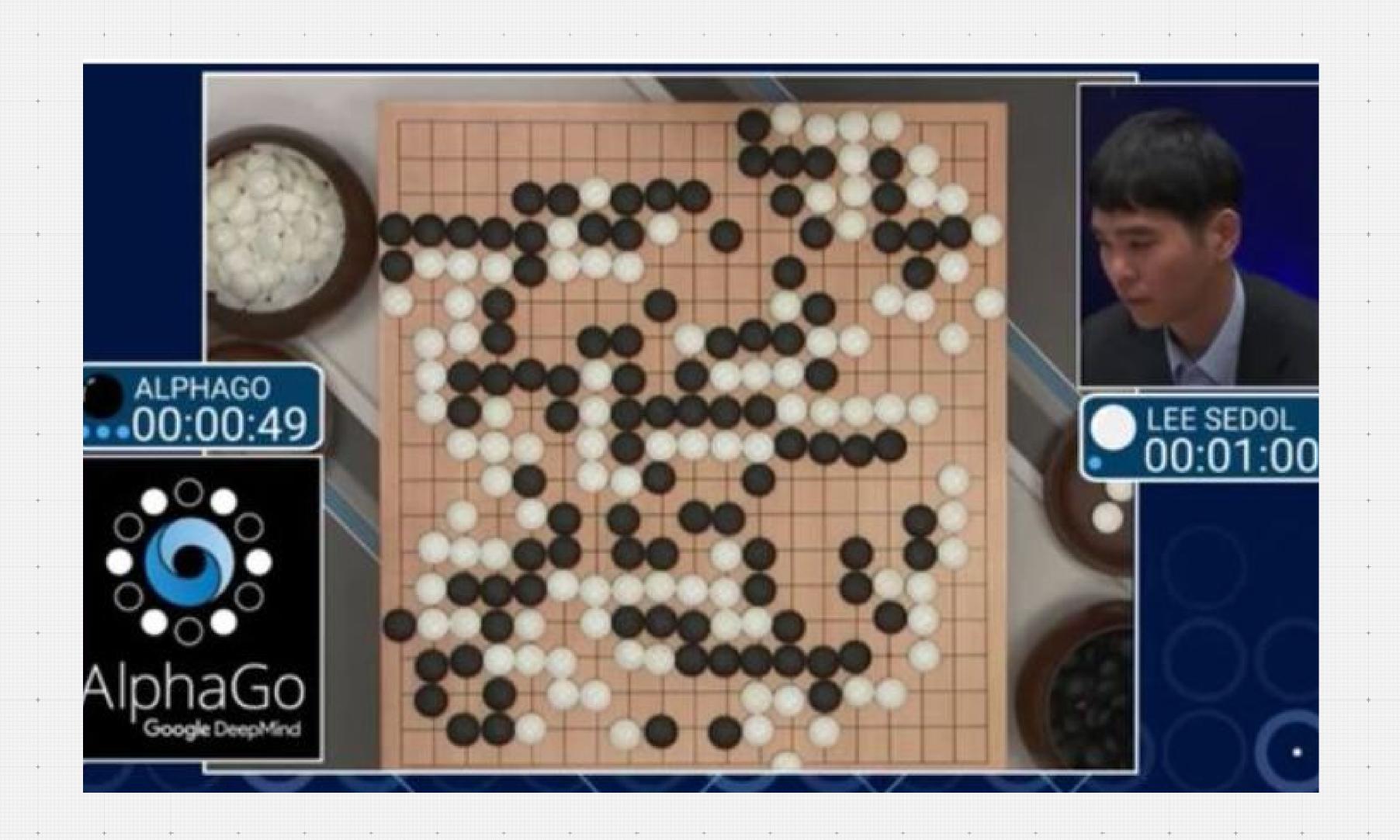
2011: Watson wins Jeapordy



2015: OpenAl founded with \$1B funding



2016: DeepMind's AlphaGo



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

addition to Amazon's own Titan LLMs

improvement vs GPT-3.5

Why it's not hype anymore?

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

3 Outcomes of GenAl Wizardry

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

Curriculum Breakdown

- Week 1 History of GenAl, How to Research and Intro to Playground Al
 - How Diffusion Models work & Playground Al
- 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 ComfyUl 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 openAl 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 langehain

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

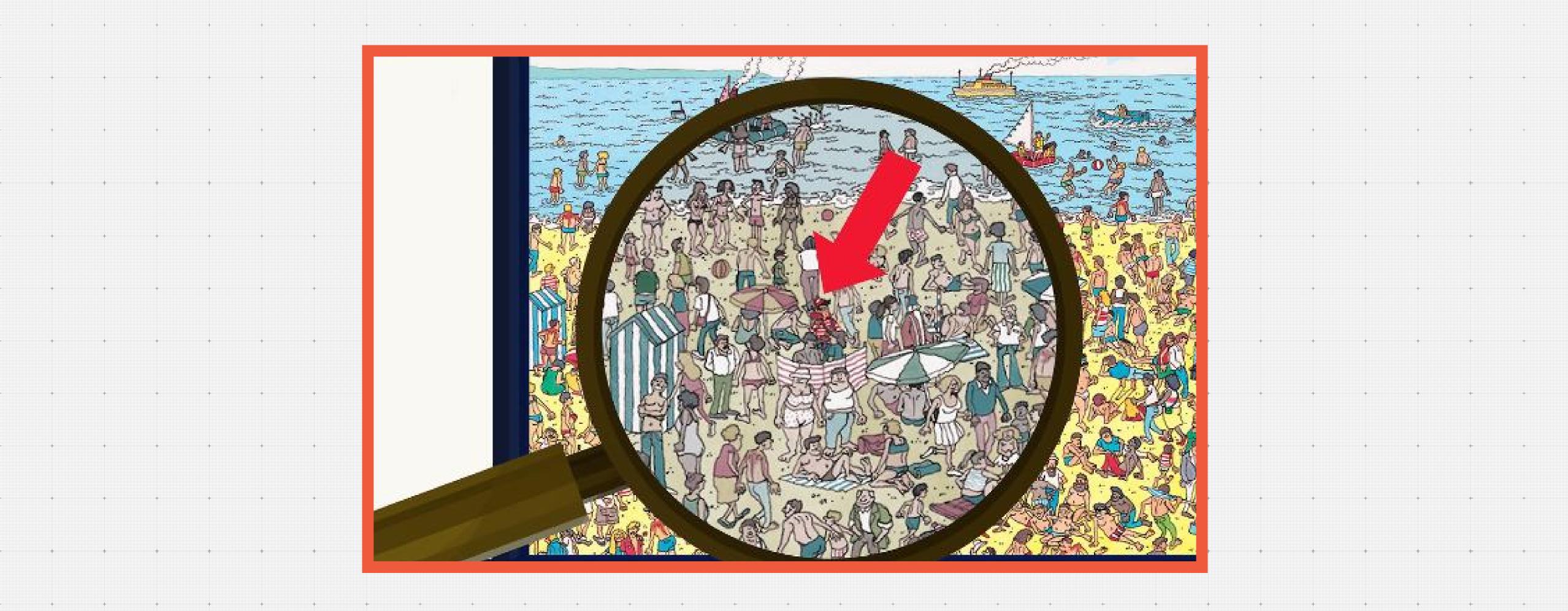
Projects

- Playground Al 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 Al Fashion Generator
- Make your own Al Influencer Avatar
- Build a chat UI with gradio/JS
- Build your own Al 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 Al 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/mreflow
- https://twitter.com/omarsar0
- https://twitter.com/seb_ruder

- https://twitter.com/karpathy_
- //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.Al/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 Al 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

Sorting Ceremony

Harry Potter Style

Tracks and Mentorship

Playground Al

QnA