Unleashing AI in iOS

Charley Ho - Dec 19 2023

Who am I?

I'm Charley Ho - I'm building https://multi.app/

Feel free to reach out at charley@multi.app

Multi is a native macOS app that enables multiplayer engineering collaboration in your desktop

I'm currently working on productionizing AI features in Multi, and have spent the past few months researching the subject.

What are LLMs? GPTs? AI?

AGI: Artificial **General** Intelligence

What is **Generative AI**? AI that specifically outputs new data from a given input.

   In the past: Recommendation engines

LLM: Large Language Model - training on _any_ text available, ie. Reddit, Twitter, etc.

GPT: Generative Pre-trained Transformer - a specific set of models by OpenAI

- Transformers were Invented by Google Research in 2017
- GPT-3 "powered" ChatGPT in 2022
- Game changer: "Temperature"
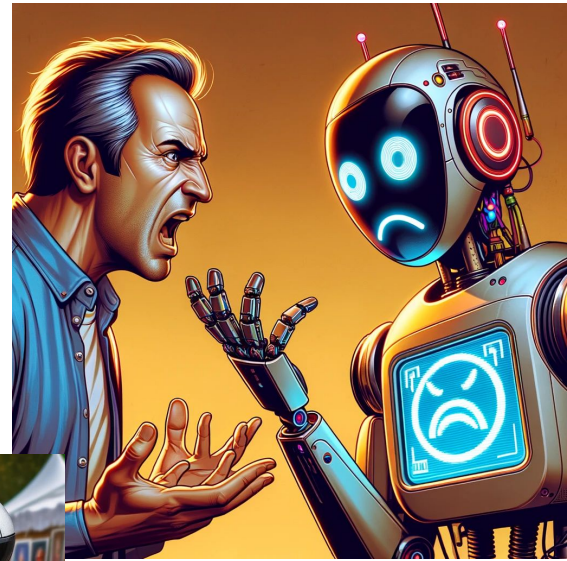
ChatGPT: Game changer

ChatGPT, Bard

- Open ended chat interface

Dall-e, Midjourney

- Generated images

Smart assistants

- Zoom call summaries, copilot

Top Companies & Models

Most important: Which model to use:

- OpenAI (GPT3, GPT4)
- Google (Gemini, PaLM)
- Meta (Llama 2)
- Mistral (Mistral 7B)
- Anthropic (Claude)
- But things are changing every day.

Factors to consider (in priority order)

1. **Output Quality**
2. Token cost
3. Computation time
4. Reliability/Consistency/Flexibility

Dangers of AI: Privacy, Security, Equity, Robot Uprisings

Privacy:

- ALWAYS read the privacy policy of the product, and know which model & hosting service is being used.

Security:

- Data leakage is a real risk. AI may be trained on your queries & data

Equity:

- AI Models echo their training data. Most of the training data is the internet. As a result AI defaults to extremes. Significant research and effort is required to make AI usable in professional environments.

Robot Uprisings:

- TBD

Building with AI

1. ChatGPT to help write code
2. AI enhanced tooling
   - Copilot - VSCode
   - Copilot for XCode
   - Other tools:
     - Sentry?
     - Notion RAG
     - Zoom Assistant
3. APIs in your product
   - MLX
   - macOS whisper API
   - MetalFX

Prompt Engineering

- The art of getting an LLM to do what you want it to do.
- A new field of study? Maybe. Or AI gets smarter for you. Ex: Dally-e prompt generation
- [Open AI Prompt Guide](#)
- Fine-Tuning & Function calling _almost_ make it

- Analogy: A smart but compulsively lying new junior teammate. Needs to be told when they're wrong, but is otherwise knows nearly everything.

Working with your own AI

Learn to get AI to do things for you:

Intro: Spend time in ChatGPT as much as you can and see what happens

Intermediate: Get ChatGPT Plus and build a GPTs

Advanced: Assistant API + Function calling + Fine-tuning

Collaborative Demo time! Some options…

1. Experiment with ChatGPT Live. Let's come up with some fun images.
2. Build our own GPT - how can we customize a GPT to help answer questions?
3. Build our own iOS app with a GPT feature
4. Demo of what I'm building into Multi

Or anything else!

Shameless plug

Use Multi.app! (You can now sign up on the webpage, or email charley@multi.app if you have questions)