AI Usage & Prompt Engineering

Course Overview

This course introduces students to the rapidly developing world of AI with an emphasis on large language models (LLMs) like OpenAI's ChatGPT and Google's Gemini, as well as text-to-image software like DALL·E. Designed for beginners, it covers practical skills for engaging with AI responsibly and creatively in everyday scenarios.

Course Objectives

- Understand the basics of AI, especially LLMs, and their role in generative tasks.
- Understand the ethical usage of AI, including its biases and societal impact.
- Learn clear communication strategies with AI, called "prompt engineering."
- Apply AI tools in practical scenarios for creativity, learning, and productivity.

Unit 1: Fundamentals of AI

Overview of AI and ethics of engagement for generative purposes.

- ☐ Slideshow - Intro to Generative AI
- ☐ Quiz - Generative AI
- ☐ Video - ▶ AI art, explained
- ☐ Video - ▶ Why Neural Networks can learn (almost) anything
- ☐ Neural Network Playground - Play around with this and notice what changes as you increase the number of neurons and hidden layers.
- ☐ Video - ▶ Watching Neural Networks Learn (skip 11:55-21:25)

Unit 2: Ethical AI Usage

Overview of AI and ethics of engagement for generative purposes.

- ☐ Slideshow - AI Ethics
- ☐ Article - AI Fairness Isn't Just an Ethical Issue
- ☐ Article - Generative AI Has a Visual Plagiarism Problem
- ☐ Video - ▶ AI can do your homework. Now what?
- ☐ Sign up for a free ChatGPT or Gemini account if you aren't signed up already
- ☐ Hands-on Generative AI Exercises
- ☐ Video - ▶ ChatGPT Jailbreak - Computerphile

Unit 3: Problem-Solving with AI

Principles of clear communication with AI through problem formulation.

- ☐ [Reading - Prompt Engineering Approaches and Strategies](#)
- ☐ [Article - Prompt Engineering 101](#)
- ☐ [Slideshow - Prompt Engineering vs. Problem Formulation](#)
- ☐ [Final Assignment - AI Application](#)
- ☐ **Additional Resources**
    - ☐ Video - ▶ But what is a neural network? | Chapter 1, Deep learning
    - ☐ Video - ▶ But what is a GPT? Visual intro to Transformers | Deep learn…
    - ☐ Video - ▶ The moment we stopped understanding AI [AlexNet]
    - ☐ [What Is ChatGPT Doing … and Why Does It Work?](#)