

Essentials and Applications of Artificial Intelligence for Clinicians

This tutorial is designed for physicians interested in grasping the essentials of modern artificial intelligence, with a particular focus on Large Language Models (LLMs). It explores the potential applications of these tools in healthcare, as well as the challenges and limitations associated with their implementation in the medical field.

We will start this tutorial with a brief introduction to modern AI, generative AI, LLMs, MLMs, and their ecosystems. Following this, we'll cover the basics of prompting and provide a concise guide to prompt engineering. We will then present and practice use cases of these tools for productivity and healthcare tasks. Finally, we will discuss the challenges and limitations of utilizing these models in healthcare.

Tutorial curriculum:

- Introduction to modern AI
 - Generative AI
 - Large Language Models (LLMs)
 - Multimodal Language Models (MLMs)
- LLM frameworks and tools
 - GPT (OpenAI)
 - Gemini (Google)
 - Claude (Anthropic)
 - Copilot (Microsoft)
 - Grok (xAI)
 - ...
- Prompt Engineering
 - Introduction to prompting concept
 - Basic of prompting Techniques
- Specialized LLMs
 - Google NotebookLM
 - OpenEvidence
- Use Cases
 - Enhancing Patient Communication
 - Personalizing Patient Education
 - Supercharging Medical notes and documents writing
 - Learning About the Differential Diagnosis
 - Medical research and information gathering
 - Harnessing Automation for work productivity
- Challenges and limitations
 - Hallucinations and Inaccurate Information
 - Ethical Considerations and Authorship



Resources and references:

- Precision medical education in the era of artificial intelligence (AI) , OCT 2024 , Harvard University ([Link](#))
- AI in Education: Leveraging ChatGPT for Teaching , Coursera, ([Link](#))
- AI For Healthcare courses, ([Link](#))
- ChatGPT in Medicine, Part 1 — Learning About the Differential Diagnosis ([Link](#))