

AI Track Plan

By David Elks

Plan Timeline Overview

| Module No. | Module Name | Main Headlines | Duration Week/Lecture |
|------------|---|--|-----------------------|
| 1 | Planting AI Seeds | AI intro, prompt engineering full guide with ChatGPT. | 1W 2L |
| 2 | Image Generation & AI art | Dall-E, Lexica, Firefly, Leonardo AI, Stable diffusion, Control Net. | 1W 2L |
| 3 | Let AI do the talk! | AI voices, D-ID, Adobe express, hugging face models on cloud GPU | 1W 2L |
| 4 | Unlock the full powers of AI with Zapier automation, and python scripting | Zapier AI, Python Scripting, Creating AI tools | 2W 4L |

Plan Modules in Details

Module 1: Planting the seeds of AI

Learning Objectives:

- Understanding basic machine learning, deep learning, neural networks, AI models concepts.
- Creating a ChatGPT account.

Lectures Plan:

| Lecture no. | Essential Question | Concepts | Projects / Activities | Skills |
|-------------|---|---|---|--|
| 1 | What is AI, and how does it work? | <ul style="list-style-type: none"> Introducing track modules, and system How to get the most out of the track Defining AI Brief History of AI since Turing Test to recent AI developments Machine Learning VS Deep Learning VS AI VS Data science Teachable machine Neural Networks and Natural language processing Rising companies in the field of AI Types of AI models (Text, image, audio, video) Future of AI and possible challenges (Jobs, Businesses, Computing) Creating a ChatGPT account | Train a simple machine learning model from images with Teachable Machine | <p>mastering basic concepts of AI models, and mechanisms.</p> <p>Understanding the history of AI from Turing test, till modernizing AI models.</p> <p>Tracking effects of AI on various aspects of life.</p> |
| 2 | <p>What makes a prompt good?</p> <p>What is prompt engineering?</p> | <ul style="list-style-type: none"> Prompt Engineering Fields of ChatGPT Elements of a prompt Types of prompts <ul style="list-style-type: none"> - Zero Shot - Few Shot - Fine Tuning Priming Prompt Task Decomposition Input-Output Analysis Prompt Injections | <p>Building a language helping assistant (Speaking partner) (Essays correction)</p> <p>Writing a full book about productivity</p> | <p>Understanding key elements of good prompts</p> <p>Write standing out prompts, to follow exact same instructions needed.</p> <p>Using AI (ChatGPT) in various aspects of life.</p> |

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| | | | | Knowing Possible fields to work in with ChatGPT |
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Module Resources

Lek 1

- <https://sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/>
- <https://www.deeplearning.ai/resources/natural-language-processing/>
- <https://www.slideshare.net/Simplilearn/machine-learning-vs-deep-learning-vs-artificial-intelligence-ml-vs-dl-vs-ai-simplilearn>
- <https://youtu.be/PeMlggyqz0Y>
- <https://youtu.be/9dFhZFukzuQ>
- <https://youtu.be/j02OZRjf2d8>

Lek 2

- [+2,000 Prompts for ChatGPT & BARD \(notion.site\)](#)
- [GPT best practices - OpenAI API](#)
- [Prompt Engineering Overview - YouTube](#)
- [Prompt-Engineering-Guide/lecture/Prompt-Engineering-Lecture-Elvis.pdf at main · dair-ai/Prompt-Engineering-Guide · GitHub](#)

Module 2: Image Generation & AI art

Learning Objectives:

- Getting started with AI art and choosing the suitable model.
- Knowing strength and weakness points of each image generation model.
- Using Stable Diffusion (Largest open-source image model).
- Kinds of digital art products that can be sold online.

| Lecture no. | Essential Question | Concepts | Projects / Activities | Skills |
|-------------|---|---|---|---|
| 1 | What arts can I generate with AI? How to fill a missing part or replace it | <ul style="list-style-type: none"> • Overview of text to image models • Dall-E • Lexica • Adobe firefly: <ul style="list-style-type: none"> - auto-generation fill - expand image - Text Effects - Generative Recolor | Create a coloring book for kids. Create T-shirt designs Create Digital art and sell it on | Getting a look at top image generation models. Understanding key elements of good image prompts. |

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| | within an image? | <ul style="list-style-type: none"> • Leonardo AI - GUI - Leonardo Models - Community models - Train your own models - AI canvas for AI editing on images • Other Great AI tools to enhance/modify images • Possible businesses, projects with AI art | digital art platforms. | <p>Training your own model from your images.</p> <p>Knowing Possible working fields from digital art.</p> |
| 2 | Is there any model give full control over all the settings of the image, fast, and free? | <ul style="list-style-type: none"> • Stable diffusion model Overview • Introducing Google colab, and hugging face • Introducing colab notebooks • Running stable diffusion model on google colab • UI of Automatic 1111 stable diffusion • prompt engineering guide for stable diffusion • Understanding Stable Diffusion and ControlNet parameters • Adding weights and models of control Net and SD • Preventing colab server from shutting down | Apply various uses for Control Net models to turn any lined drawing into realistic image. | <p>Generating image with full control of its aspects with stable diffusion.</p> <p>Getting used with google clab notebooks.</p> <p>Turning your lines drawing into great art with control Net.</p> <p>Enhancing functionality of stable diffusion with weights.</p> |

Module Resources

Lek 1

- [Generative AI for creatives - Adobe Firefly](#)
- [Lexica](#)
- [DALL-E 2 \(openai.com\)](#)
- [Leonardo.ai](#)
- [Leonardo AI: A Step-by-Step Login and User Guide \(cloudbooklet.com\)](#)

Lek 2

- [Regional Prompter: Control image composition in Stable Diffusion - Stable Diffusion Art \(stable-diffusion-art.com\)](#)
- [How to run Stable Diffusion on Google Colab \(AUTOMATIC1111\) - Stable Diffusion Art \(stable-diffusion-art.com\)](#)
- [Stable Diffusion Quick Start Guide \(notion.site\)](#)

Module 3: Let AI do the talk!

Learning Objectives:

- Getting started with AI voices, cloning, and editing them.
- Make interactive talking avatar/character.
- Create a body movement animation depending on the AI voice.
- Run AI models from the hugging face on cloud GPU (google colab).

| Lecture no. | Essential Question | Concepts | Projects / Activities | Skills |
|-------------|---|---|--|---|
| 1 | How to make an AI animated talking character with customizable voice? | <ul style="list-style-type: none">• Introducing AI voice models (Eleven labs, play.ht, wellsaidlabbs, ...)• Customizing your needed voices and make them realistic• Turn picture into avatar with AI / create AI character to do the talk• Animating Characters with D-ID• Adobe Express Animation from audio | <p>Create talking avatar/characters with AI voices.</p> <p>Clone your own voice into AI voice.</p> <p>Create animated characters with body movements from text/audio with Adobe Express.</p> | <p>taking a look at various famous voice models and choosing the best for your work.</p> <p>Converting your own voice into an AI version.</p> <p>Animating any cartoon characters (mouth, body) in harmony with the text.</p> |

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| | | | | Designing talkable character with AI with natural face movements. |
| 2 | How to run AI models from hugging face to a free cloud GPU to avoid queue time? | <ul style="list-style-type: none"> Running hugging face models on google colab. Running QR code AI art generator Parameters affecting QR code design (seeds, guidance scale, steps) Running SadTalks model (Free D-ID opensource model) Running Voice models on google colab | Design customizable QR code arts Making talking characters with fully free opensource models | Getting known on open-source models, and where to get their updates. Installing and running multiple open-source models. Generating eye catching QR code art. |

See examples made on projects mentioned with the following link:

<https://drive.google.com/drive/folders/1oSBNRH7zd3L5s-TsHCKFr17rsDcP8ewf?usp=sharing>

Module Resources:

Lek1:

- [Create a speaking animated character | Midjourney + other AI Tools - YouTube](#)
- [ElevenLabs | Prime Voice AI](#)
- [D-ID | The #1 Choice for AI Generated Video Creation Platform](#)
- [Free Animation Maker: Create Animated Videos, | Adobe Express](#)

Lek2:

- [Run Hugging Faces Spaces Demo on your own Colab GPU or Locally - YouTube](#)
- [QR Code AI Art Generator - a Hugging Face Space by huggingface-projects](#)
- <https://colab.research.google.com/drive/1jrKbIK4iISeilrCasc02G8JAd8Z3G45h?usp=sharing>
- [SadTalker - a Hugging Face Space by vinthony](#)

Module 3: Unlock the powers of AI with Zapier automation, python scripting, and openAI API keys

Learning Objectives:

- Automating various workflows applications and integrate ChatGPT with them.
- Building strong understanding to basic python programming scripting.
- Integrate APIs from OpenAI, and stability AI with python scripting.
- Building real life projects to automate tasks and enhance ChatGPT functionality with python scripting.

| Lecture no. | Essential Question | Concepts | Projects / Activities | Skills |
|-------------|--|---|--|--|
| 1 | Is it possible automate workflows between apps with ChatGPT? | <ul style="list-style-type: none"> • Introducing Zapier AI automation. • GUI of Zapier • Create automatic workflows between apps in Zapier. • Integrate ChatGPT into workflows. • Counting tokens used of ChatGPT for cost reduction. | Build a connection between Gmail, ChatGPT, Google sheets. (Email get summarized automatically and sent as feedback into google sheets) | Integrating ChatGPT to automate workflow of multiple apps. |
| 2 | How much can I do with programming? | <ul style="list-style-type: none"> • Python 101 full crash course - installing python - installing visual studio code - basic functions - variables & Data types (int, float, double, bool, lists, dict, tuples) - Strings - Conditions - Loops - Functions - Modules - OpenAI API key | Small projects to practice concepts: <ul style="list-style-type: none"> - Band Name Generator - Tip Calculator - Treasure Island: Mystic Lake - Rock Paper Scissors - Password Generator - | <p>Understanding python fundamentals needed for building programs integrated with ChatGPT.</p> <p>Getting known on ChatGPT API keys, and how to estimate tokens and reduce the cost of your project.</p> |
| 3 | Can ChatGPT be enhanced for some features I need? | <ul style="list-style-type: none"> • Integrating python scripting basics with OpenAI ChatGPT API to enhance its functionality by: | | Using OpenAI API key with python scripting in real life projects. |

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| | | <ul style="list-style-type: none"> - Make that version search the web and respond back. - Make it able to generate images. - Make it able to trace market coin prices instantly, and giving a report. | | Enhance functionality of ChatGPT and adding new features with python scripting. |
| 4 | What else can be done with python scripting and ChatGPT API? | <ul style="list-style-type: none"> • Coding a script to scrap the web for today's matches, passing it to chat GPT, and sending a report summary of all information collected. • Reviewing all modules taken. . | | Building more projects with python scripting and ChatGPT API. |

Module Resources

Lec1:

- [ChatGPT + Zapier Business Tutorial - A Crash Course on Chat GPT for Beginners 2023 - YouTube](#)
- [How to use AI with automation using Zapier | Zapier](#)

Lec2:

- [Cheat Sheets - Python Crash Course, 2nd Edition \(ehmatthes.github.io\)](#) // not all cheat sheet used. Just columns that cover the basic concepts.
- [This is How Professionals Use ChatGPT \(Advanced Course\) - YouTube](#)

Lec3:

- [Get ChatGPT Max Edition - ByPass All Limits! \(learnwithhasan.com\)](#)
- [Get ChatGPT Max Edition Now - ByPass All Limits! - YouTube](#)