

AI Learning Course Plan Level 1

Course Link <https://github.com/skdwriting/ks/upload/main/ai/courses-plans>

Notes:

- Any better resources for learning, please suggest through issues/raising PRs. It will help other learners.
- Sustainability is the key for building knowledge! Be patient, it pays!
- The week-wise plan and expected results are only for reference. You can adjust the pace as needed.
- Create your github repository and start adding your learning notes. Do not worry about formatting etc...just start with .md / txt notes. Starting and Sustaining for every learning is important. Though tools can summarize, avoid using such tools or copy paste! please summarize yourself. It will firm up your learning! Trust me! :)

Topic	Why?	What?	How? (Pointers)	When?	Expected Results	Reference Links
Intro to AI & ML Concepts	Build foundational AI knowledge	History & types of AI/ML	Watch intro videos, review slides, quiz on terminology	Week 1	Summary notes, quiz results	AI Buzzwords and Basic pointers : https://github.com/skdwriting/ks/blob/main/ai/AI%20-%20Buzzwords%20to%20Reality%20and%20Trends%20v1.2.pdf Google AI - https://grow.google/ai/ MS Learn AI - https://learn.microsoft.com/en-us/ai/ YouTube AI Basics - https://www.youtube.com/watch?v=2ePf9rue1Ao
Regression & Classification	Understand supervised learning	Run regression/classification	Use scikit-learn on datasets, evaluate metrics, compare models	Week 2-3	Jupyter notebook with model reports	Scikit-learn Tutorials - https://scikit-learn.org/stable/tutorial/index.html , DataCamp ML - https://www.datacamp.com/courses/supervised-learning-with-scikit-learn
Data Preprocessing & Feature Eng.	Improve model quality	Clean and transform data	Pandas/Numpy, missing values, encoding, scaling, feature creation	Week 4	Cleaned dataset examples, feature report	Kaggle Intro - https://www.kaggle.com/learn/intro-to-machine-learning , Pandas Documentation - https://pandas.pydata.org/docs/
Neural Networks & Deep Learning	Explore GenAI/model architectures	Train a basic neural net	Use TensorFlow/Keras, visualize training curves	Week 5-6	Notebook with training logs and accuracy	TensorFlow Tutorials - https://www.tensorflow.org/tutorials , DeepLearning.ai - https://www.deeplearning.ai/
GenAI & Foundation Models (Text/Image)	Learn latest AI trends	Prompt LLM/GAN, try image gen	Colab with Gemini/ChatGPT/Suno/Anitgravity; generate text, music, art	Week 7-8	Generated outputs and code Installed antigravity and tried to build a simple login application with admin panel to add users	OpenAI Playground - https://platform.openai.com/playground , Jio AI Classroom - https://www.jio.com/ai-classroom Antigravity: https://antigravity.google/
Agentic/Orchestration Basics	Gain agentic pipeline knowledge	Run agent workflow with LLM+retrieval	LangChain doc QA lab with vector DB	Week 9	Code and demo video	LangChain - https://python.langchain.com/docs/ , Microsoft SK Learn RAG - https://learn.microsoft.com/en-us/semantic-kernel/
Model Deployment Basics	Deployment makes AI real-world applicable	Serve model via REST API	Flask/FastAPI deploy, test endpoint	Week 10	Running endpoint and test results	FastAPI Tutorial - https://fastapi.tiangolo.com/tutorial/ , Flask Docs - https://flask.palletsprojects.com/en/2.1.x/
Explainable AI & Model Evaluation	Build trust, spot issues	SHAP/LIME explainability	SHAP/LIME on classifiers, impact plots	Week 11	Explainability report and plots	SHAP Docs - https://shap.readthedocs.io/en/latest/ , LIME - https://github.com/marcotcr/lime
MCP/Prompt Injection/AI Security	Understand GenAI vulnerabilities	Experiment with adversarial prompts	Read on prompt injection, try open LLM examples	Week 12	Security assessment logs	Prompt Attack Examples - https://llm-attacks.org/ , AI Security Guide - https://www.practical-devsecops.com/ai-security-engineer-roadmap/

Weekly AI News	Keep up with the industry	Read Latest AI news and Updates (Target read) Must identify not more than 3 resources.	Select 3 links to get regular updates and read weekly 30 min	Every Week	Notes/updates on our AI usage for work and personal purposes	https://github.com/skdwriting/ks/blob/main/ai/ai-reading-industry-weekly-updates/
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