Skill Oceans
BUILD YOUR CAREER WITH SKILL OCEANS

DEEP LEARNING & NLP

Days	Topics
Day 1	➔ Python basics (data types, loops, functions, OOP) ➔ Numpy, Pandas for data handling
Day 2	➔ Matplotlib, Seaborn, Plotly basics ➔ Real-world dataset exploration (Kaggle dataset: Titanic/House Prices)
Day 3	➔ Train/test split, preprocessing ➔ Models: Logistic Regression, Decision Trees
Day 4	➔ RandomForest, SVM basics ➔ Metrics: Accuracy, F1, ROC
Day 5	➔ Project 1 - End-to-End ML Pipeline ◆ Dataset: Movie Reviews (sentiment classification) ◆ Build: Preprocessing → Feature extraction (TF-IDF) → Train ML model → Evaluate → Deploy with Flask
Day 6	
Day 7	➔ Neurons, activation functions, forward pass
Day 8	➔ Tensors, autograd, optimizers ➔ Build simple NN with PyTorch
Day 9	➔ Convolution, pooling layers ➔ Build CNN in PyTorch
Day 10	➔ Dropout, BatchNorm, learning rate schedulers

Day 11	➔ Project 2 – Image Classification ◆ Dataset: CIFAR-10 ◆ Build model + Deploy with Flask/Streamlit (upload an image → get prediction)
Day 12	
Day 13	➔ Tokenization, stopwords, stemming, lemmatization
Day 14	➔ Word2Vec, GloVe embeddings ➔ RNN/LSTM basics with PyTorch
Day 15	➔ Self-attention concept (minimal theory) ➔ HuggingFace Transformers intro
Day 16	➔ Machine Translation basics
Day 17	➔ Project 3 – NLP Web App (Summarizer + Sentiment) ◆ Use HuggingFace models ◆ Deploy with Streamlit (user inputs text → gets summary & sentiment score)
Day 18	
Day 19	➔ How GPT works (tokens, completions) ➔ Using OpenAI API for text generation
Day 20	➔ Prepare dataset (JSONL format) ➔ Fine-tune GPT with custom data (FAQs, product Q&A)
Day 21	➔ Function calling, embeddings API, vector DB (FAISS)
Day 22	➔ Combine GPT API + Web frontend + DB
Day 23	➔ Project 4 – AI-Powered Chat Assistant ◆ Features: ● Knowledge base search (via embeddings) ● GPT fine-tuned

Day 24	responses ● Web UI (Streamlit/Flask) ◆ Example: “Customer Support Bot” trained on FAQ dataset
Day 25	➔ Q&A, Future Trends, What’s Next?
Day 26	➔ Assignment & Project Submission