

Intermediate Track

Deep Learning with TensorFlow & PyTorch

Duration: 2 Months (Mon–Fri, ~90 Hours)

Mode: Live Online / Classroom

Tools & Technologies: TensorFlow, PyTorch, Keras, Jupyter Notebook, GPU

Syllabus

Week 1

- Introduction to Neural Networks
- Perceptrons, forward & backward propagation
- Assignment at end of week

Week 2

- ANN (Artificial Neural Networks)
- Hands-on with TensorFlow & PyTorch
- Assignment at end of week

Week 3

- CNN (Convolutional Neural Networks)
- Image classification basics
- Assignment at end of week

Week 4

- Advanced CNNs (ResNet, Inception)
- Transfer learning
- Assignment at end of week
- Mock Interview 1

Week 5

- RNN (Recurrent Neural Networks)
- LSTMs and GRUs
- Assignment at end of week

Week 6

- Natural Language Deep Learning basics
- Assignment at end of week

Week 7

- Optimization & regularization in DL
- Dropout, batch normalization
- Assignment at end of week

Week 8

- Project: Deep Learning case study
- Final presentation
- Mock Interview 2
- Assignment at end of week

Learning Outcomes

- Understand deep learning fundamentals
- Build ANN, CNN, and RNN models
- Work with TensorFlow and PyTorch
- Apply transfer learning and optimization techniques
- Deploy a deep learning project

Natural Language Processing (NLP)

Duration: 2 Months (Mon–Fri, ~90 Hours)

Mode: Live Online / Classroom

Tools & Technologies: Python, NLTK, SpaCy, HuggingFace, Transformers

Syllabus**Week 1**

- Text preprocessing basics
- Tokenization, stemming, lemmatization
- Assignment at end of week

Week 2

- Bag of Words, TF-IDF
- Hands-on with Scikit-learn
- Assignment at end of week

Week 3

- Sentiment analysis project
- Assignment at end of week

Week 4

- Word embeddings: Word2Vec, GloVe
- Assignment at end of week
- Mock Interview 1

Week 5

- Intro to Transformers: BERT, GPT overview
- Assignment at end of week

Week 6

- NER (Named Entity Recognition)
- Assignment at end of week

Week 7

- Building a chatbot with Python
- Assignment at end of week

Week 8

- Final NLP Project presentation
- Mock Interview 2
- Assignment at end of week

Learning Outcomes

- Preprocess and clean text data
- Implement sentiment analysis and text classification
- Use word embeddings and vectorization techniques
- Understand transformers and modern NLP
- Build a chatbot or text AI project

AI for Cloud & Big Data

Duration: 2 Months (Mon–Fri, ~90 Hours)

Mode: Live Online / Classroom

Tools & Technologies: AWS SageMaker, Azure ML, GCP AI Platform, Databricks, Snowflake, Spark MLlib

Syllabus

Week 1

- Cloud computing basics for AI
- AWS, Azure, GCP overview
- Assignment at end of week

Week 2

- Deploying models on AWS SageMaker
- Assignment at end of week

Week 3

- Azure ML Studio & GCP Vertex AI
- Assignment at end of week

Week 4

- Spark MLlib for distributed ML
- Assignment at end of week
- Mock Interview 1

Week 5

- Databricks for AI workflows
- Assignment at end of week

Week 6

- Snowflake ML integrations
- Assignment at end of week

Week 7

- Deploying models as APIs
- Assignment at end of week

Week 8

- End-to-end cloud AI project
- Mock Interview 2
- Assignment at end of week

Learning Outcomes

- Understand cloud platforms for AI
- Deploy AI models on AWS, Azure, and GCP
- Work with Spark MLlib for big data
- Integrate AI with Databricks & Snowflake
- Deploy AI models as APIs