Machine Learning

PROGRAM OVERVIEW

This Machine Learning Foundations program rapidly advances software engineers to Machine Learning experts, focusing on real-world problem-solving through key practices like data preprocessing and model deployment. Through intensive hands-on exercises and projects, participants utilize major ML libraries: Scikit-learn, TensorFlow, PyTorch, to build and deploy advanced models.

AUDIENCE

This program is built for software engineers with some exposure to Python who are ready to transition into applied machine learning roles. It's ideal for engineers seeking to build practical ML expertise and deploy real-world solutions using modern tools and frameworks.

INTENDED OUTCOME

Participants will gain hands-on experience in the full ML lifecycle, from data preprocessing to model deployment and using libraries like Scikit-learn, TensorFlow, and PyTorch. By program's end, they'll be equipped to solve real-world problems with production-ready machine learning models.

PRE-WORK

- Foundations of Machine Learning
- Introduction to Machine Learning
- Data Preprocessing

PART 1: CLASSICAL MACHINE LEARNING

- Foundations of Machine Learning (in practice)
- Supervised Learning – Regression
- Supervised Learning – Classification
- Unsupervised Learning & Evaluation Metrics

PART 2: NEURAL NETWORKS & ADVANCED ML

- Introduction to Neural Networks & Deep Learning
- Convolutional Neural Networks (CNNs)
- Recurrent Neural Networks (RNNs) & LSTM
- Reinforcement Learning
- Model Deployment & Course Wrap-up

SAMPLE LEARNING EXPERIENCE	Week 1	Week 2	Week 3	Week 4
Procured Self-Paced Learning	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●
Customized Assessment	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●
Instructor-Led	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●
Optional Office Hours	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●
Optional Q&A	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●