

Machine Learning Engineering Curriculum

Program Overview

This four-year undergraduate program focuses on machine learning techniques, algorithms, and applications, combining software engineering fundamentals with advanced data science and AI skills.

Year 1 - Foundation

- Introduction to Programming in Python
- Engineering Mathematics I & II
- Data Structures and Algorithms
- Linear Algebra for Machine Learning
- Computer Organization
- Communication Skills

Year 2 - Core Computing

- Object-Oriented Programming with Java
- Database Management Systems
- Probability and Statistics for Data Science
- Operating Systems
- Software Engineering
- Discrete Mathematics

Year 3 - Machine Learning Specialization

- Introduction to Machine Learning
- Deep Learning and Neural Networks
- Data Mining and Data Warehousing
- Natural Language Processing
- Computer Vision

- Elective I (e.g., Time Series Analysis)

Year 4 - Advanced Applications and Project

- Reinforcement Learning
- Big Data Analytics
- Cloud Computing for Machine Learning
- AI Ethics and Governance
- Capstone Project in Machine Learning
- Internship / Industry Collaboration

Career Prospects

Graduates will be prepared for careers as Machine Learning Engineers, Data Scientists, AI Developers, and Research Engineers in top technology firms and research organizations.