



# Lumen AI & ML Engineering Program

**Transform Data into Intelligence. Transform Your Career.**

**Top choice for developers**

# Program Overview

The Lumen AI & Machine Learning Program is a comprehensive, industry-aligned bootcamp designed to equip learners with the skills needed to develop, fine-tune, and deploy AI-driven solutions using cutting-edge technologies. The program focuses on modern AI tools, including Large Language Models (LLMs), LangChain, Retrieval-Augmented Generation (RAG), and cloud-based AI deployment, while incorporating enterprise MLOps best practices. Through hands-on projects, real-world case studies, and expert mentorship, participants will gain the expertise to build scalable AI solutions and advance their careers in AI and machine learning.

# Key Details

## Duration

Full-time: 6 months

Part-time: 12 months

## Mode

100% Online

Instructor-led classes

## Languages

English, German



# Key Details

## Internship

- One-month internship
- Work on a real-world project
- External (tech company) or internal (Lumen program)

## Mentorship

- Dedicated technical mentors
- Branding coaches
- Industry experts

## Curriculum

Combines industry relevance with practical and theoretical depth.:

- **Expertly Crafted:** Designed with input from Fortune 500 experts (Meta, Amazon).
- **Insights from Senior Leaders:** Contributions from top-tier professionals, including CTOs, VPs, and Entrepreneurs.
- **Academic Excellence:** Enhanced by University Professors for academic rigor.

# Program Structure

## Foundation

Build a strong foundation in AI and ML fundamentals, tools, and techniques.

## Brilliance

Develop advanced AI and ML skills and apply them to real-world problems.

## Mastery

Master advanced topics and prepare for job placement.



# Foundation – 12 Weeks

## Technical Curriculum

- Machine Learning Basics
- Python for AI and ML: Pandas, NumPy, scikit-learn,
- Data Preprocessing and Feature Engineering
- Exploratory Data Analysis (EDA) and Visualization: Matplotlib, Seaborn, Plotly
- Supervised & Unsupervised Learning
- Regression, Classification, Clustering, Reinforcement Learning
- Git & GitHub for Version Control
- Introduction to Cloud Platforms
- Model Evaluation & Performance Metrics
- Co-pilot for AI and ML Engineering

## Business Acumen & Professional Skills

- Communicating AI Insights Effectively
- Understanding Business Metrics & KPIs
- AI Ethics & Bias Mitigation
- Fundamentals of AI Product Management
- Industry-Specific Applications (Finance, Marketing, Healthcare, etc.)

## Personal Branding and Job Preparation

- Identifying career goals
- Shortlist your dream companies
- Developing job search strategy
- Crafting Resume for AI & ML Engineering Roles
- Setting up LinkedIn and Github

# Brilliance – 8 Weeks

## Technical Curriculum

- Deep Learning: Tensorflow, keras
- Neural Networks, CNNs, RNNs, Transformers
- LangChain for AI Automation & AI Workflows: Building AI-driven workflows and automation pipelines
- Generative Pre-trained Transformers (GPTs)
- Fine-Tuning LLMs, token optimization, text embeddings
- Prompt Engineering
- OpenAI API Integration
- AI Model Evaluation & Optimization: Metrics, hyperparameter tuning, and model performance
- Retrieval-Augmented Generation (RAG) for LLMs
- MLOps Foundations: CI/CD, model versioning, MLflow

## Business Acumen & Professional Skills

- Presenting Insights to Executives & Stakeholders
- Measuring ROI and Communicating Business Impact
- AI Strategy and Implementation

## Personal Branding and Job Preparation

- Building a compelling portfolio
- Optimizing LinkedIn & GitHub Profiles
- Building your Network
- Establishing your professional brand
- Using AI tools for effective job search and personal branding

# Mastery – 4 Weeks

## Technical Curriculum

- Applied AI: Computer Vision, Natural Language Processing
- Reinforcement Learning & Advanced AI Applications
- Deploying AI Models with Docker & Kubernetes
- Cloud-Based AI Deployment: AWS Lambda/GCP Functions/Azure AI
- Scaling AI Models in Production Environment
- AI Governance, Compliance, & Risk Management

## Business Acumen & Professional Skills

- Strategic Thinking & Business Alignment
- Developing data-driven mindset
- AI Governance & Compliance

## Personal Branding and Job Preparation

- Intro to Freelancing & self-employment
- Writing cover letters and proposals that stand out
- Mock Interviews & Feedback Sessions
- Salary Negotiation Strategies
- Developing Professional Development Roadmap

# Tools & Technologies

1

## Programming

Python, Jupyter Notebook/  
Google Colab, Git

2

## Data Handling

Pandas, NumPy,  
BeautifulSoup

3

## Machine Learning & AI

Scikit-learn, TensorFlow, Keras,  
Hugging Face

4

## Reporting & Dashboarding

Matplotlib, seaborn, Data Studio

5

## Cloud & Deployment

AWS/Azure/Google Cloud,  
Docker, Kubernetes, MLFlow

6

## AI Workflow Automation

AI Pipelines





# Career Pathways

- AI Engineer
- Machine Learning Engineer
- Deep Learning Specialist
- AI Research Scientist
- AI Product Manager
- LLM Engineer
- AI Workflow & Automation Specialist



# Join the Lumen AI & ML Engineering Program Today!

Take the first step toward a rewarding career in AI and machine learning. Gain cutting-edge expertise, build real-world projects, and launch a successful AI career.

Apply now to get started!

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