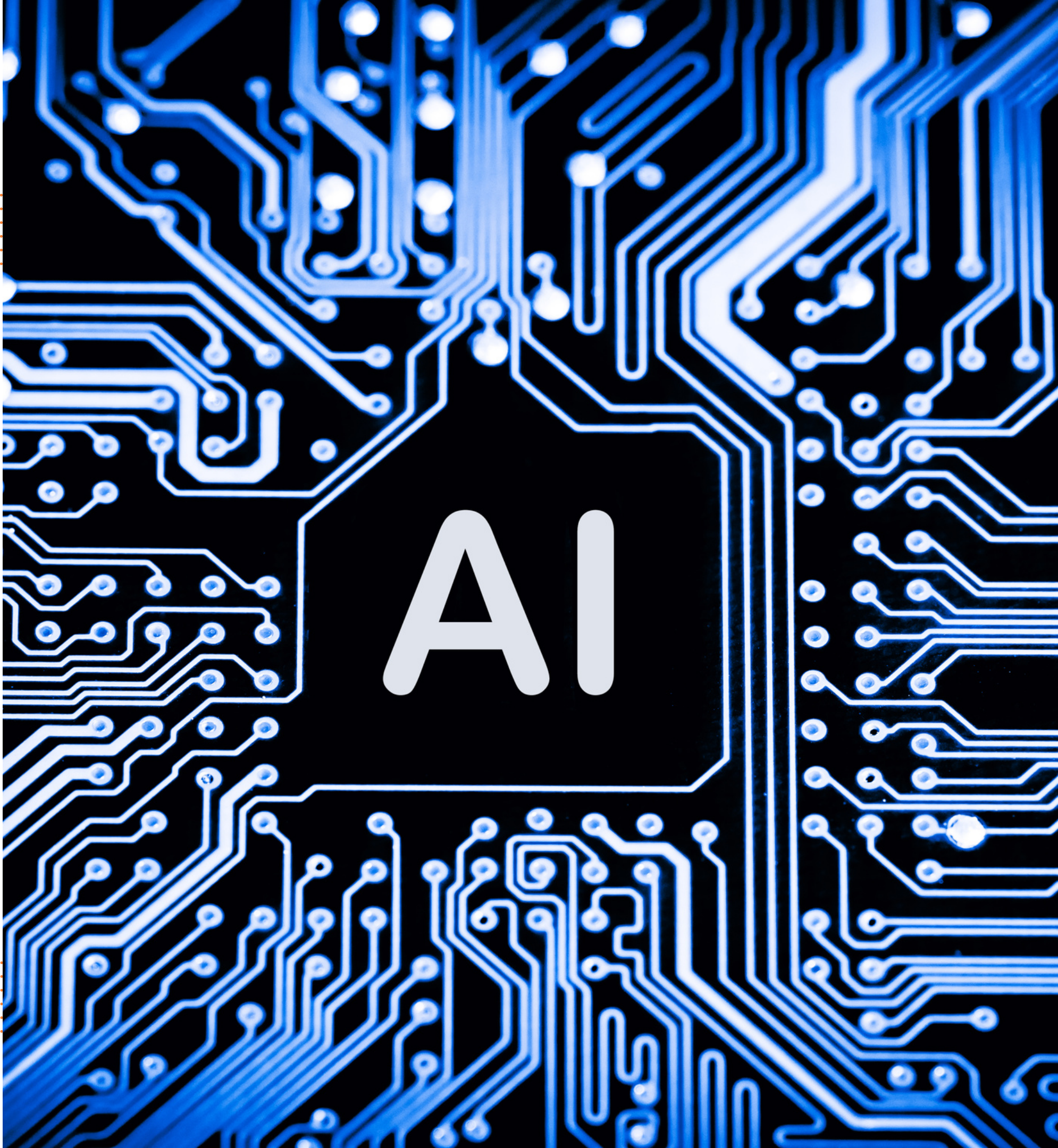




Tech Learniversity

AI PROGRAM

QUALITY EDUCATION FROM QUALITY PEOPLE

The right half of the image features a dark blue background with a complex, glowing blue circuit board pattern. In the center of this pattern, the letters "AI" are displayed in a large, white, sans-serif font. The circuit lines are intricate, with many small circular nodes and branching paths, creating a sense of depth and technological complexity.

AI

PROGRAM NAME

AI PROGRAM FOR UNIVERSITY

QUALITY EDUCATION FROM QUALITY PEOPLE



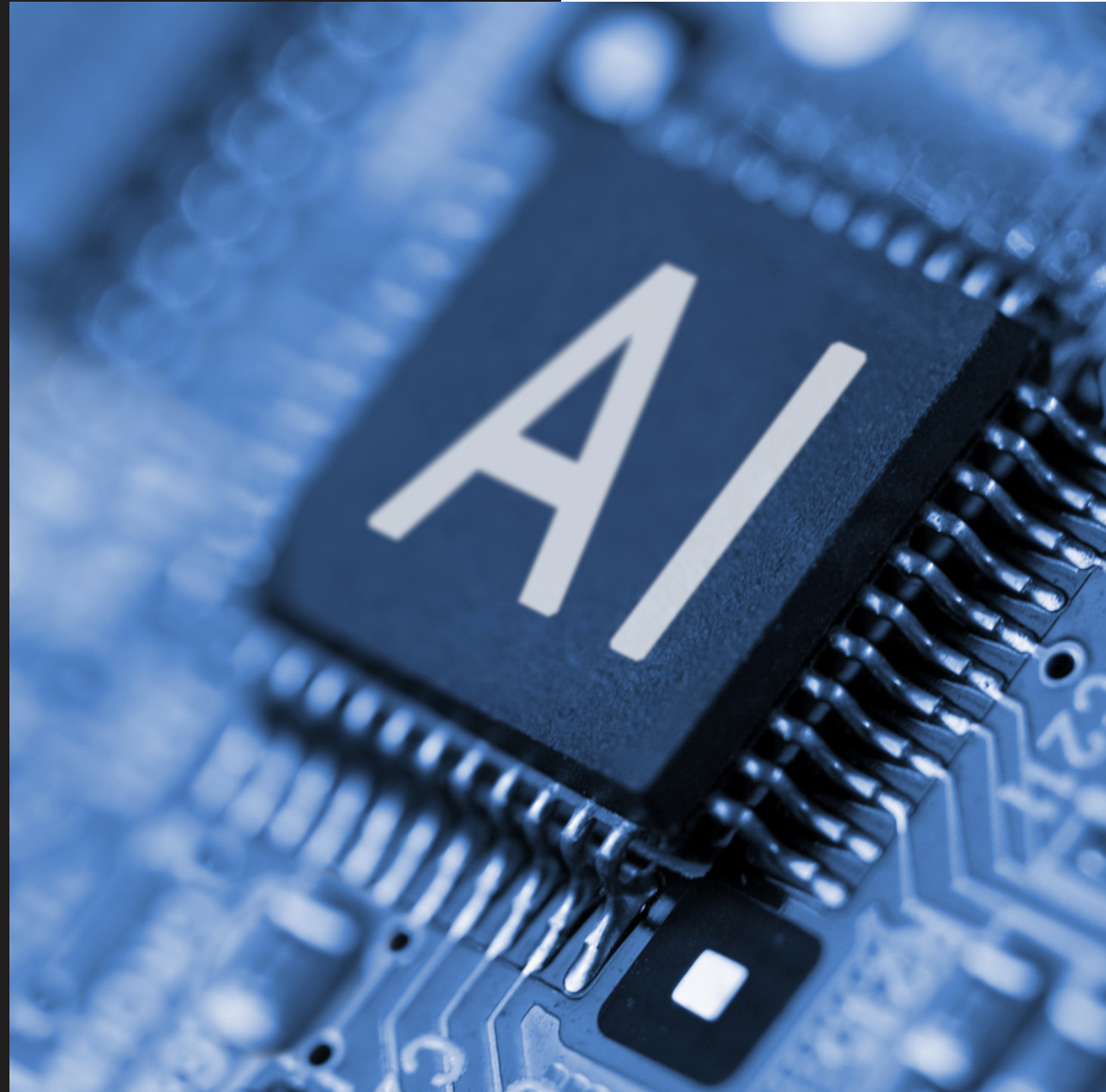


PROGRAM OVERVIEW

Tech Learniversity's AI Program for University is a comprehensive 120-hour curriculum designed for University students. The program combines AI theory, coding practice, applied projects, and capstone deployment to prepare learners for real-world AI roles. The course is structured in 5 Modules (24 hours each) – Foundations, Machine Learning, Deep Learning, Advanced AI, and Industry Projects.

PROGRAM DURATION

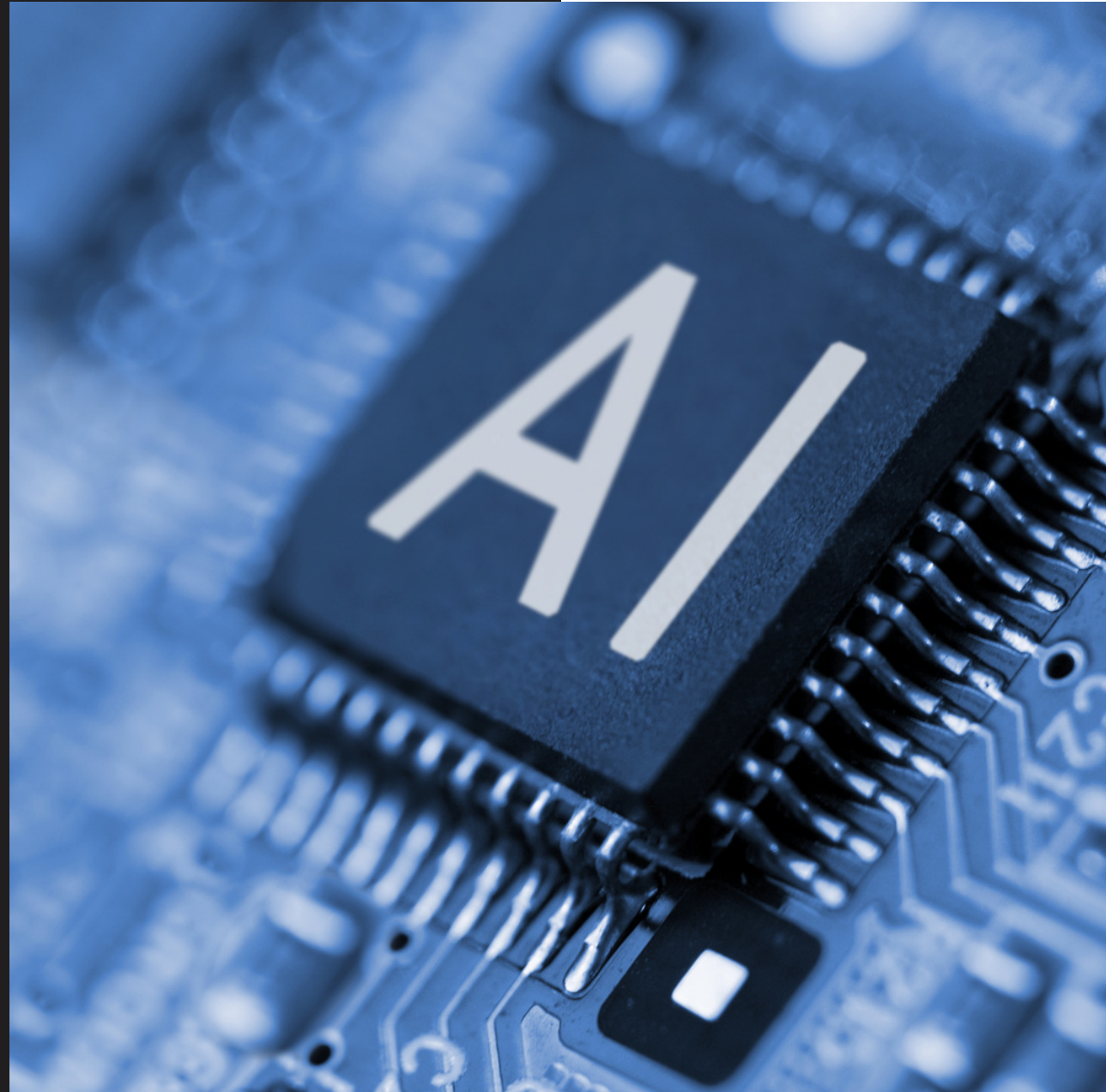
- Total Duration: 120 hours
- Format: Online - Instructor-led and project-driven
- Modules: 5 Modules × 24 Hours = 120 Hours



PROGRAM GOALS

By the end of the program, students will:

1. Master AI foundations – Python programming, data handling, ML/DL principles.
2. Learn hands-on ML algorithms – Regression, Trees, SVM, Ensemble models, Clustering.
3. Build deep learning projects – CNNs, RNNs, LSTMs, GANs.
4. Explore advanced AI – NLP (BERT, GPT), Computer Vision, Generative AI, Cloud AI.
5. Deploy AI solutions – Using Flask, FastAPI, Streamlit, Docker, and Cloud.
6. Work on portfolio projects – Industry-focused (healthcare, finance, HR, e-commerce).
7. Develop an end-to-end AI capstone project demonstrating deployment and documentation.
8. Integrate ethics and best practices – AI bias, data governance, fairness.



PREREQUISITES

- Basic familiarity with computers and file handling (Excel, CSV, TXT).
- Comfort with high school math (algebra, probability, statistics).
- Prior exposure to programming or SQL is helpful but not mandatory (Python basics are taught in the program).
- A problem-solving mindset and curiosity to apply AI in business or industry scenarios.



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MODULE 1: AI FOUNDATIONS (24 HOURS)

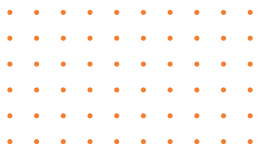
Goal: Build solid fundamentals of AI, Python, and problem-solving mindset.

TOPICS:

1. Introduction to AI – Definitions, history, types.
2. AI Applications in industries (healthcare, finance, HR, manufacturing).
3. Basics of Data – Types, quality, collection.
4. Introduction to Python for AI – Setup & environment (Jupyter/Colab).
5. Python basics – Variables, data types.
6. Python basics – Operators, expressions.
7. Python control flow – If-else, loops.
8. Python functions.
9. Python data structures – Lists, tuples.
10. Python dictionaries & sets.



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11. Strings in Python (NLP basics intro).
12. File handling (CSV, TXT).
13. Libraries for AI – NumPy basics.
14. Libraries for AI – Pandas basics.
15. Libraries for AI – Matplotlib basics.
16. Data visualization mini-project.
17. Introduction to Machine Learning concepts.
18. Supervised vs Unsupervised learning overview.
19. Linear Regression basics.
20. Logistic Regression basics.
21. Mini Hands-on: Predict student marks dataset.
22. Mini Hands-on: Predict survival on Titanic dataset.
23. Ethics in AI – Bias, fairness, responsibility.
24. Mini Project Presentation (Module 1).



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MODULE 2: MACHINE LEARNING & APPLIED AI (24 HOURS)

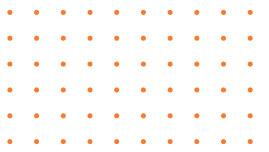
Goal: Learn core ML algorithms and apply them to datasets.

TOPICS:

1. Recap of ML basics.
2. Workflow of ML project (Data → Train → Test → Deploy).
3. Data Preprocessing – Cleaning, handling missing values.
4. Feature Engineering & Selection.
5. Train-Test Split & Cross Validation.
6. Supervised Learning – Decision Trees.
7. Supervised Learning – Random Forest.
8. Supervised Learning – SVM.
9. Supervised Learning – k-NN.
10. Evaluation Metrics – Accuracy, Precision, Recall, F1.



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11. Classification Hands-on: Iris dataset.
 12. Regression Hands-on: House Price dataset.
 13. Unsupervised Learning – Clustering (k-means).
 14. Unsupervised Learning – Hierarchical clustering.
 15. Dimensionality Reduction – PCA.
 16. Association Rule Learning – Apriori.
 17. Recommendation Systems – Collaborative Filtering.
 18. Hands-on: Movie Recommendation System.
 19. ML Deployment Basics – Pickle/Joblib.
 20. Model Tuning – GridSearchCV, Hyperparameters.
 21. Bias & Variance – Overfitting vs Underfitting.
 22. Mini Project: Spam Email Classifier.
 23. Mini Project: Loan Approval Prediction.
 24. Project Presentation (Module 2).
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MODULE 3: DEEP LEARNING (24 HOURS)

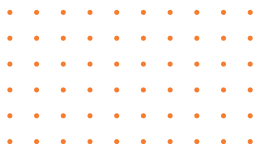
Goal: Learn Neural Networks and apply DL frameworks.

TOPICS:

1. What is Deep Learning? ANN basics.
 2. Structure of Neural Networks – Neurons, weights, activation functions.
 3. Forward Propagation explained.
 4. Backpropagation explained.
 5. Introduction to TensorFlow & Keras.
 6. Building first ANN model.
 7. Hands-on: Predict MNIST digits.
 8. Activation Functions – Sigmoid, ReLU, Softmax.
 9. Loss functions & optimizers.
 10. CNN (Convolutional Neural Networks) intro.
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11. CNN architecture explained.
 12. Hands-on: CNN on CIFAR-10 dataset.
 13. Transfer Learning (VGG, ResNet).
 14. RNN (Recurrent Neural Networks) basics.
 15. LSTM (Long Short-Term Memory) explained.
 16. Hands-on: Text generation using RNN.
 17. Autoencoders – Concept.
 18. GANs – Introduction & applications.
 19. Hands-on: Build a simple GAN (MNIST).
 20. Hyperparameter tuning in DL.
 21. Regularization (Dropout, BatchNorm).
 22. Deployment of DL models.
 23. Mini Project: Image Classifier (custom dataset).
 24. Project Presentation (Module 3).
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MODULE 4: ADVANCED AI CONCEPTS (24 HOURS)

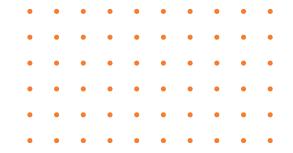
Goal: Explore NLP, Computer Vision, Generative AI, and Cloud AI.

TOPICS:

1. Natural Language Processing – Introduction.
2. Text preprocessing – Tokenization, stopwords.
3. Bag of Words & TF-IDF.
4. Hands-on: Spam detection with NLP.
5. Word Embeddings – Word2Vec, GloVe.
6. Advanced NLP – Transformers intro.
7. BERT & GPT overview.
8. Hands-on: Sentiment Analysis with BERT.
9. Computer Vision – Intro & applications.
10. Image preprocessing – Resizing, normalization.



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11. Hands-on: Face detection with OpenCV.
 12. Hands-on: Object detection with pre-trained model (YOLO/Faster R-CNN).
 13. Transfer Learning in CV.
 14. Cloud AI Services – Google AI, Azure ML, AWS AI.
 15. Hands-on: Deploy ML model on Cloud (Colab/Streamlit).
 16. AI APIs – Speech, Translation, Vision APIs.
 17. Hands-on: Speech-to-Text with API.
 18. AI for IoT – Smart applications.
 19. Generative AI – Text (ChatGPT).
 20. Generative AI – Images (DALL·E, Stable Diffusion).
 21. Generative AI – Audio & Video tools.
 22. Ethics in Advanced AI (deepfakes, privacy).
 23. Mini Project: NLP-based Chatbot.
 24. Project Presentation (Module 4).
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MODULE 5: AI PROJECTS & INDUSTRY APPLICATIONS (24 HOURS)

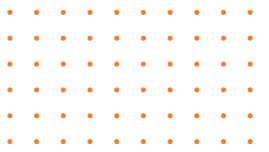
Goal: Build capstone projects, deploy models, and prepare for careers.

TOPICS:

1. Recap of all levels.
2. Industry Applications – AI in healthcare, finance, HR, e-commerce.
3. Project Brainstorming & Idea Selection.
4. Dataset Collection & Cleaning.
5. Exploratory Data Analysis (EDA).
6. Feature Engineering.
7. Model Selection (ML/DL/NLP/CV).
8. Model Training.
9. Model Testing.
10. Model Optimization.



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11. Deployment with Flask/FastAPI.
 12. Deployment with Streamlit.
 13. Version Control (Git/GitHub).
 14. CI/CD for AI projects.
 15. Dockerizing AI applications.
 16. Cloud Deployment (Heroku/Azure/AWS).
 17. Real-time AI inference basics.
 18. Building an AI API endpoint.
 19. Industry Best Practices – Documentation.
 20. AI Project Report Preparation.
 21. Team Project Work (Phase 1).
 22. Team Project Work (Phase 2).
 23. Capstone Project Presentations.
 24. Future of AI + Career Roadmap.
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BY THE END OF 120 HOURS, PROFESSIONALS WILL HAVE:

By the end of 120 hours, professionals will have:

Module 1: Python + ML Foundations Projects (Titanic survival, Student Marks Prediction)

Module 2: ML Projects (Loan Approval, Spam Classifier, Recommendation System)

Module 3: DL Projects (Image Classifier, Text Generator, GANs)

Module 4: Advanced AI Projects (Chatbot, Face Detection, Sentiment Analysis, Object Detection)

Module 5: Capstone Project (End-to-End AI solution deployed on Cloud with Flask/Streamlit)

CAPSTONE & PORTFOLIO

By completing this program, professionals will have a portfolio of 8–10 AI projects, including:

- Foundational ML models (Regression, Classifiers)
- Applied ML (Recommender, Spam Filter)
- Deep Learning (CNN, RNN, GANs)
- NLP Chatbot & Sentiment Analysis
- Advanced AI (Object Detection, Generative AI)
- Capstone End-to-End AI Deployment Project



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Company Description

At Tech Learniversity, we are dedicated to transforming lives through accessible, cutting-edge technology education and personalized learning experiences that empower individuals to excel in the digital era.



ABOUT US

Company Description

Tech Learniversity is a cutting-edge EdTech firm dedicated to revolutionizing global education through personalized learning experiences. We offer innovative training programs, including immersive bootcamps and next-generation AI courses, designed to equip learners with the skills needed to excel in today's competitive job market.

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