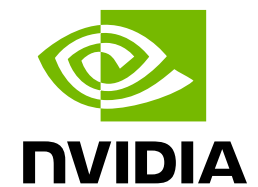# ELEVORIX
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AI DIPLOMA
OUTLINES

100 HOURS

nVIDIA | Inception Program

INTRODUCTION

The **AI Diploma** is a specialized, comprehensive program designed to provide students with advanced knowledge and practical experience in artificial intelligence.

The aim of this **diploma** is to create a seamless bridge between theoretical education and the skill sets demanded by the job market.
By focusing on industry-relevant tools, technologies, and real-world applications, this diploma empowers students with the expertise to succeed in **cutting-edge AI fields.**

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TECHNICAL DETAILS

- **Format**: Interactive lectures + hands-on projects
- **Tools Covered**: Python, Numpy, Pandas, Scikit-Learn, TensorFlow, Keras, LangChain
- **Learning Style**: 30% theory, 70% practical labs & projects
- **Outcome**: Build AI-driven applications, from predictive models to intelligent AI agents

WHY SHOULD I STUDY THIS DIPLOMA?

- **Industry-Relevant:** Learn exactly what the AI job market demands
- **Hands-On Learning:** Work with real datasets & projects
- **Future-Proof Skills:** Master ML, DL, Computer Vision, NLP, and AI Agents
- **Career Growth:** Stand out as a data scientist, AI engineer, or ML specialist
- **Global Tools:** Use the same libraries & frameworks powering Fortune 500 companies

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REAL-LIFE SCENARIOS & SIMULATIONS

You won't just learn theory— you'll practice AI in real-world contexts:

- Spam email detection (Classification)
- Customer segmentation (Clustering)
- Predicting customer churn (Regression & Classification)
- Image recognition with CNNs (Computer Vision)
- Sentiment analysis (NLP)
- Building your own **AI Assistant with LangChain**

CURRICULUM OUTLINE

Course 1: Python for Beginners – 12 hours

- Python syntax, variables, data types, operators
- Control flow (if, loops, functions)
- Data structures (lists, dicts, sets, tuples)
- File handling, error handling
- Hands-on
- Writing small programs (calculators, text parsers)
- Beginner utilities (record keeping, text search, data entry)

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CURRICULUM OUTLINE

Course 2: Python for Machine Learning – 12 hours

- Numpy & Pandas for data manipulation
- Matplotlib & Seaborn for visualization
- Scikit-Learn basics
- Data preprocessing & feature engineering
- Hands-on
- Loading & cleaning datasets
- Exploratory data analysis (EDA)
- Building first ML models in Scikit-Learn

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python™

CURRICULUM OUTLINE

Course 3: Machine Learning – Supervised Learning – 14 hours

- Regression (Linear, Polynomial, Ridge, Lasso)
- Classification (Logistic Regression, k-NN, Decision Trees, Random Forests)
- Model evaluation (accuracy, precision, recall, F1, ROC, AUC)
- Hyperparameter tuning (Grid Search, Random Search)
- Hands-on
- Predictive models with real datasets
- Spam detection, churn prediction
- Hyperparameter tuning practice

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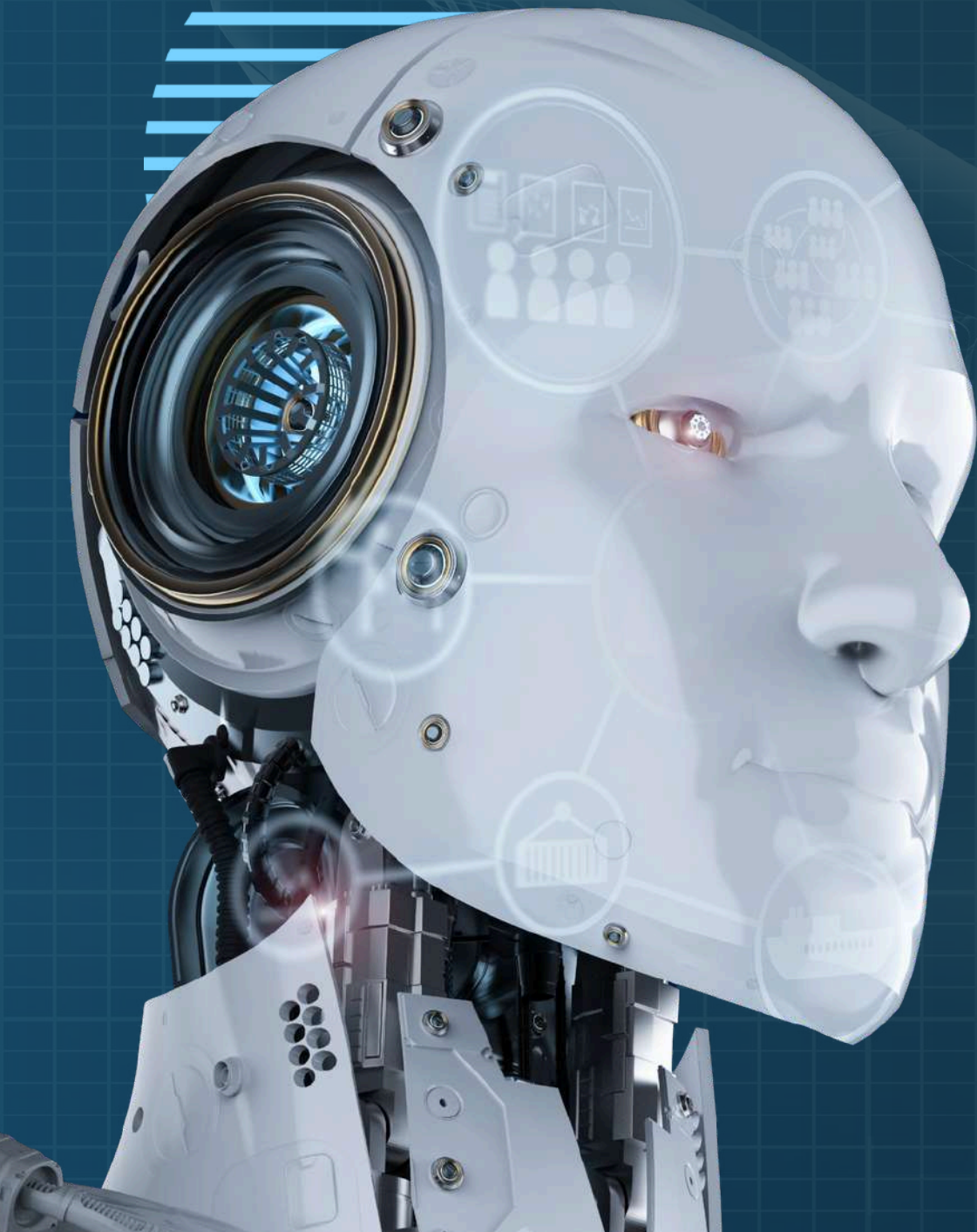
CURRICULUM OUTLINE

**Course 4: Machine Learning – Unsupervised Learning – 12 hours**

- Clustering (k-Means, DBSCAN, Hierarchical)
- Dimensionality Reduction (PCA, t-SNE)
- Association Rules (Apriori, FP-Growth)
- Anomaly detection
- Hands-on
- Customer segmentation with clustering
- PCA for high-dimensional data
- Market basket analysis with association rules

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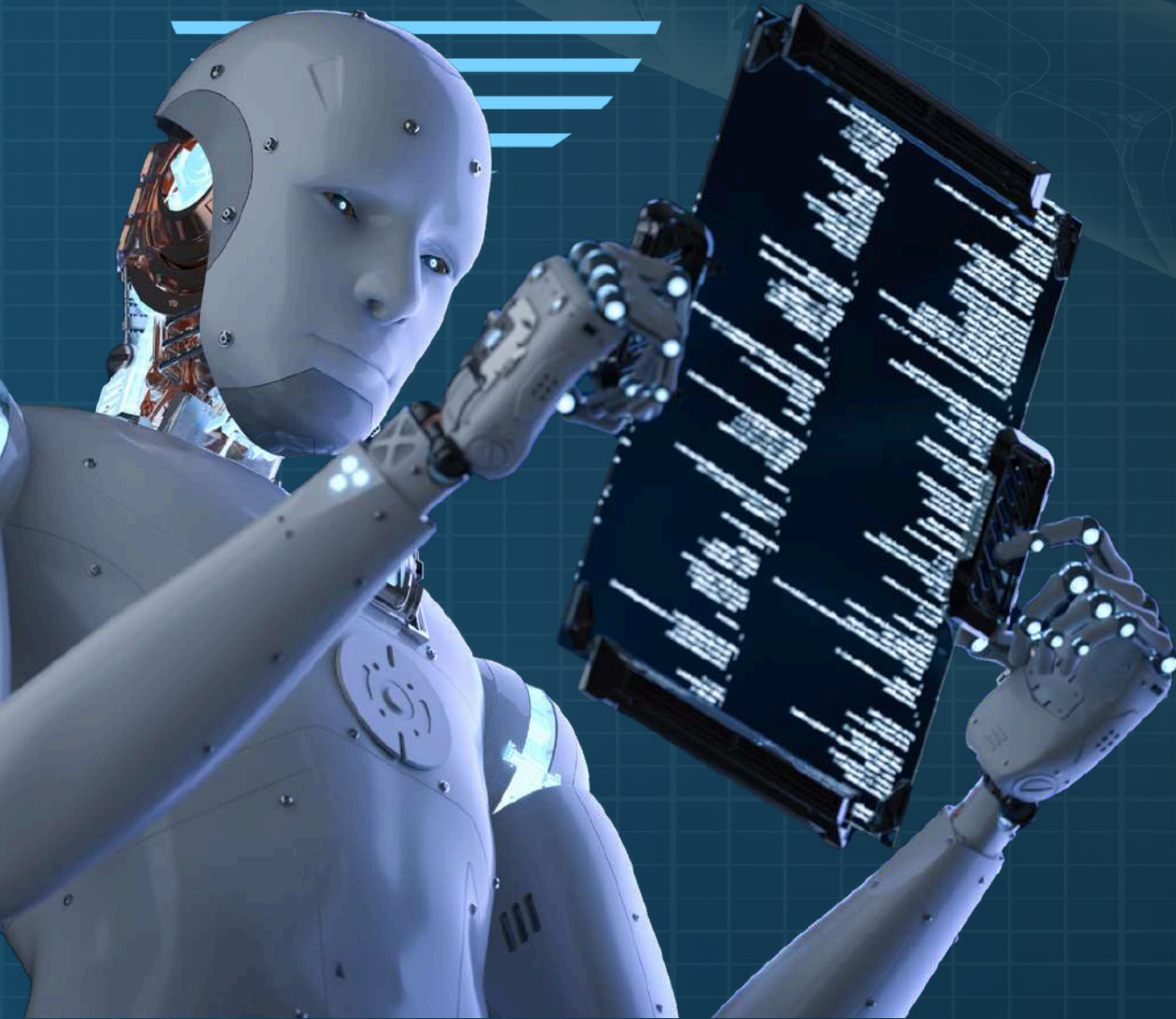
CURRICULUM OUTLINE

Course 5: Deep Learning Fundamentals – 14 hours
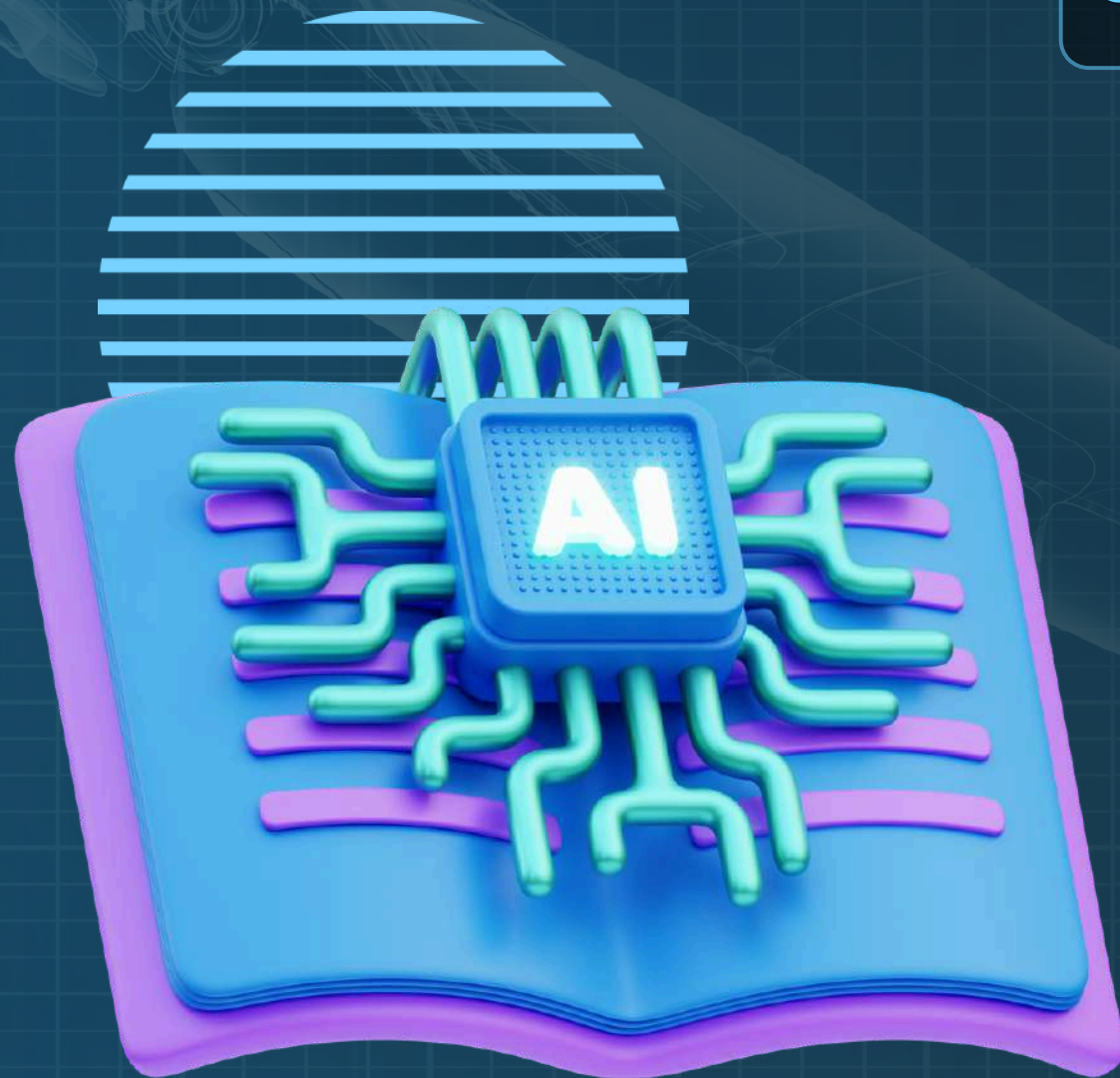
- Neural Networks (Perceptron, MLP)
- Forward & Backpropagation
- Activation functions (Sigmoid, ReLU, Tanh, Softmax)
- Optimization (SGD, Adam)
- Overfitting, Regularization (Dropout, BatchNorm)
- Hands-on
- Neural networks with TensorFlow/Keras
- MNIST classification
- Experimenting with optimizers & activation functions

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CURRICULUM OUTLINE

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Course 6: Computer Vision with Deep Learning – 14 hours

- CNNs, Pooling, Padding, Strides
- Transfer Learning (ResNet, VGG)
- Generative Models (Autoencoders, GANs)
- Image Augmentation & Data Prep
- Hands-on
- Training CNNs on image datasets
- Using pretrained models for feature extraction
- Implementing Autoencoders & GANs
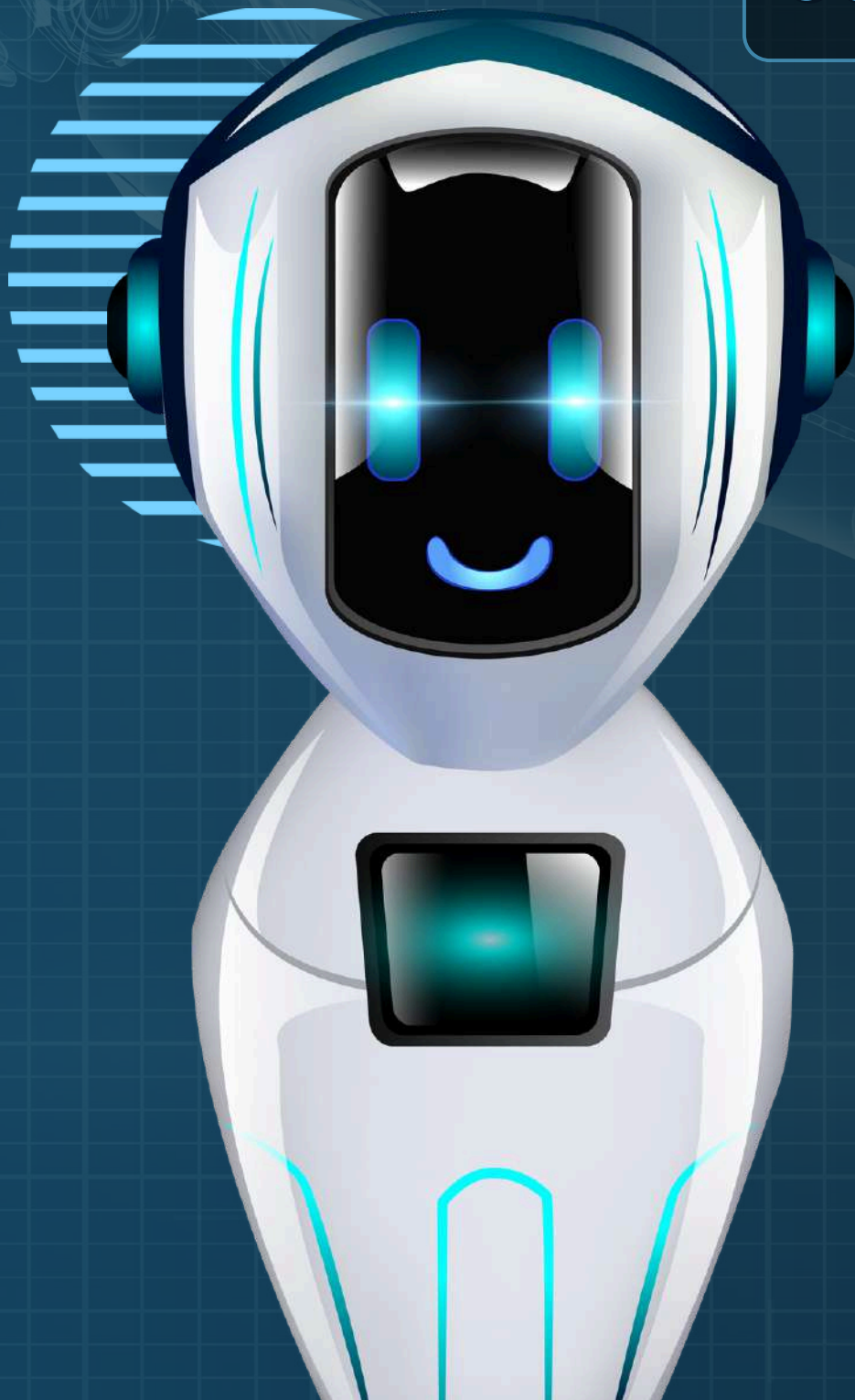
CURRICULUM OUTLINE

Course 7: Natural Language Processing & AI Agents – 18 hours

- Text preprocessing (tokenization, stemming, lemmatization)
- Word embeddings (Word2Vec, GloVe)
- Sequence models: RNN, LSTM, GRU
- Attention Mechanism & Transformers (BERT, GPT overview)
- Retrieval-Augmented Generation (RAG)
- Agentic RAG (tool use, external knowledge, reasoning)
- AI Agents with LangChain (memory, tools, orchestration)
- Evaluation of LLM outputs
- Hands-on

- Sentiment analysis & text classification
- Sequence modeling with RNN/LSTM
- Transformer-based classification
- Building a simple RAG pipeline
- Developing a LangChain-based AI assistant
- Creating a multi-tool AI agent

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![Elevorix Academy logo]

WHY ELEVORIX ACADEMY?

EXPERT INSTRUCTORS WITH REAL-WORLD INDUSTRY EXPERIENCE

PRACTICAL LEARNING: 70% PROJECT-BASED LEARNING

CUTTING-EDGE CURRICULUM UPDATED FOR 2025 TECHNOLOGIES

CAREER SUPPORT: PORTFOLIO-BUILDING PROJECTS, CAREER GUIDANCE, AND NETWORKING

CONCLUSION

Elevorix Academy AI Diploma is more than just a training program—it is a career accelerator.

By combining strong theoretical foundations with intensive hands-on practice, this diploma equips students to confidently build and deploy real-world AI solutions.

Graduates will not only understand the principles of data science, machine learning, deep learning, and AI agents, but also gain the ability to apply them in industry-ready projects. Whether your goal is to become a data scientist, AI engineer, or machine learning specialist, this diploma provides the tools, skills, and confidence to thrive in the evolving world of artificial intelligence.

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