SkillCred

AI & Machine Learning Program

Build Intelligent Systems. Deploy ML Pipelines. Solve Real Problems.

8	96	4	6
Weeks	Hours	Projects	Days/Week

HYBRID MODEL 2 Solo + 1 Pair + 1 Group Capstone

Dual Track
8W Standard + 4W Fast Track

Mentor Verified
Every project reviewed

PAT Certified
Score visible to all HRs

8-Week Syllabus

Mon–Sat | 2 Hrs/Day | 48 Sessions | 96 Contact Hours

01 Python for ML & Math — SOLO 1 START

NumPy, Pandas, Matplotlib, linear algebra, probability, statistics, Jupyter

02 Classical Machine Learning — SOLO 1 DELIVERY

Regression, Trees, SVM, KNN, K-Means, PCA, cross-validation, Scikit-learn

03 Feature Eng. & Optimization — SOLO 2 START

SMOTE, GridSearch, Optuna, Random Forest, XGBoost, LightGBM, SHAP, LIME

04 Deep Learning Fundamentals — SOLO 2 DELIVERY

Neural nets, backpropagation, TensorFlow/Keras, PyTorch, CNNs, transfer learning

05 NLP & Transformers — PAIR START

Tokenization, Word2Vec, RNNs/LSTMs, attention, HuggingFace fine-tuning

06 Advanced Deep Learning — PAIR DELIVERY

YOLO, segmentation, GANs, RL concepts, multi-modal, data augmentation

07 MLOps & Production — CAPSTONE START

MLflow/W&B;, model versioning, FastAPI, Docker, monitoring, drift detection

08 Capstone Sprint & Demo — CAPSTONE DELIVERY

E2E pipeline, optimization, quantization, edge deploy, documentation, demo

DAILY 2-HOUR SESSION

0:00–0:10	0:10–0:40	0:40–1:30	1:30–1:50	1:50–2:00
Recap	Concept	Build Sprint	Standup	Wrap

Your 4 Portfolio Projects

2 Solo (individual) + 1 Pair (collaborative) + 1 Group Capstone (team)

SOLO 1 | INDIVIDUAL | Weeks 1–2 Difficulty:

End-to-End Predictive Analytics Pipeline

Automated EDA, feature engineering pipeline, 5+ model training (Linear Reg, Tree, RF, XGBoost, SVM), Optuna hyperparameter optimization, SHAP explainability, Streamlit web app with what-if analysis. Model exceeds baseline by >15%, CV variance <5%.

Tech: Python 3.10+, Pandas, NumPy, Scikit-learn, XGBoost, Optuna, SHAP, Plotly, Streamlit HR Signal: Junior ML Engineer / Data Scientist hire bar

SOLO 2 | INDIVIDUAL | Weeks 3–4 Difficulty:

Custom Image Classification System

Custom dataset curation (1000+ images, 5+ classes), augmentation pipeline (rotation, flip, cutout, mixup), transfer learning with 3+ architectures (ResNet50, EfficientNet, MobileNet), GradCAM visualizations, ONNX export, Gradio web interface. Accuracy >85%, inference <100ms.

Tech: PyTorch/TensorFlow, torchvision, Albumentations, GradCAM, Gradio, ONNX, TensorBoard HR Signal: ML Engineer (Computer Vision) hire bar

PAIR PROJECT | 2–3 STUDENTS | Weeks 5–6 Difficulty:

Multi-Modal AI Application (NLP + Vision)

NLP module: text classification/NER with fine-tuned transformer. Vision module: image classification with custom CNN. Combined inference accepting text + image inputs. FastAPI async serving, batch prediction, model A/B testing. F1 >0.80, accuracy >85%, API <500ms.

Tech: HuggingFace Transformers, PyTorch, FastAPI, Redis, Docker, Gradio/Streamlit

Student A: NLP model training, HuggingFace fine-tuning, text pipeline, evaluation | Student B: Vision model, image preprocessing, FastAPI serving, Docker, integration

GROUP CAPSTONE | 5 STUDENTS | Weeks 7–8 | Pick 1 of 3 Difficulty:

Option 1: Intelligent Document Processing Platform

Document upload + OCR, classification (invoice/receipt/contract/form), key-value extraction, LLM summarization, semantic search, workflow automation, dashboard with analytics, REST API. Processes 50+ real documents across 3+ types. Tech: Tesseract/EasyOCR, PyTorch, HuggingFace, Vector DB, FastAPI, Docker

Option 2: AI-Powered Healthcare Triage System

Symptom chatbot (LLM-powered), image upload for skin/wound analysis (CNN), triage classification (emergency/urgent/routine), explainable AI, doctor dashboard, telemedicine API integration. Tech: LLM API, PyTorch CNN, FastAPI, React, PostgreSQL, Docker

Option 3: Predictive Maintenance Platform

Sensor data ingestion, anomaly detection (autoencoders, isolation forests), RUL prediction (LSTM), failure classification, maintenance scheduling, real-time monitoring dashboard with alerts. Tech: PySpark, PyTorch LSTM, Kafka, InfluxDB, Grafana, Docker

Module Ownership (all capstones): A: Data pipeline, features | B: Anomaly detection models | C: RUL prediction, classifier | D: Dashboard, scheduling | E: API, deployment, monitoring

Two Career Pathways

Both available simultaneously — not mutually exclusive

Employment Track

1. Complete 4 verified projects
2. Take PAT certification exam
3. Portfolio published to HR Portal
4. HRs discover and shortlist you
5. Interview scheduled via platform
6. Offer extended — placement tracked

Startup Track

1. Build investor-grade capstone
2. Mentor verifies for Investor Portal
3. List project with pitch deck & demo
4. Investors discover your project
5. Pitch invitation and presentation
6. Startup mentorship and funding

Project Assessment Test (PAT)

Your certification score — visible to every HR on the platform

MCQs 20% | Coding 25% | Architecture 20% | Viva Defense 25% | Peer Review 10%

90–100 Elite
Top 5% — senior roles, startup founding

75–89 Pro
Job-ready with solid fundamentals

60–74 Certified
Entry-level — core concepts proven

Mentor Verification — The Trust Engine

No project reaches HR or Investor portal without rigorous mentor review.

Code Quality 25% | Functionality 25% | Architecture 20% | Docs 15% | Deployment 15%

Ready to Build Your Future?

4 verified projects | PAT certification | Two career pathways

ENROLL NOW

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