

FARDIN PIROOZI

Academic CV — M.Sc. Application in Artificial Intelligence / Machine Learning

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RESEARCH INTERESTS

Federated Learning & Privacy-Preserving Machine Learning · Reinforcement Learning · Explainable AI (XAI) · Hybrid Physics-Informed / Deep Learning Systems · Applied Machine Learning for Healthcare · Trustworthy Human-in-the-Loop AI Systems

EDUCATION

B.Sc. in Computer Engineering — Islamic Azad University, Kermanshah Branch 2022 – 2026 (Expected)

Overall GPA: 17.00 / 20.00 (≈ 1.9 – 2.0 on the German/Bavarian conversion scale)

- Bachelor's Thesis: "A Hybrid Cellular Automata and Reinforcement Learning Framework for [thesis domain — refine title]"
- Thesis Grade: 20 / 20 (full marks). Source code and implementation publicly available on request.
- Thesis Advisor: Dr. Reza Ebrahimpourian

PUBLICATIONS

CortexNet: A Family of Convolutional Neural Networks for Alzheimer's Disease Diagnosis Using Brain MRI *Scientific Reports*

H. Ghahramani, M. Velaei, F. Piroozi, A. Ghaffari, L. Yari — 3rd author (of 5)

- Designed and evaluated a family of lightweight CNN architectures (CortexNet V1–V4) for binary, 3-class, and 4-class Alzheimer's diagnosis from brain MRI; the selected model reached 98.4–98.9% accuracy across scenarios at a fraction of the computational cost of ResNet50/EfficientNetB0.

FedCBAM-AD: A Federated Deep Learning Framework With Attention Mechanism for Alzheimer's Disease

AppliedPies Workshop, University of Genoa (applepies.unige.it) — Accepted

2nd author

- Extended the CortexNet diagnostic approach into a privacy-preserving Federated Learning setting (CNN + CBAM attention, FedAdam aggregation) across 3 clients under non-IID (Dirichlet) data distribution, reaching 97.4% (binary) and 94.6% (multi-class) accuracy without centralizing patient data.

RESEARCH EXPERIENCE

Data Scientist Researcher — Islamic Azad University, Kermanshah Branch 2024 – Present

- Research and development of ML/DL models focused on Federated Learning and healthcare applications.
- Diagnosed and analyzed severe training slowdowns in a Differentially-Private FedProx pipeline (1D ResNet + SE blocks, Opacus DP-SGD) on an industrial IoT intrusion-detection dataset, isolating DP-SGD overhead as the primary bottleneck.
- Built end-to-end experimental pipelines — ETL, feature engineering, hyperparameter tuning, evaluation — with full MLflow experiment tracking and model versioning.

Applied AI System Design — Smart Hydroponic Greenhouse Digital Twin (independent research project) 2025 – Present

- Co-designed a hybrid physics + ML digital twin with a counterfactual explanation engine and a human-approval-before-execution control loop, in collaboration with a small technical team.
- Currently extending the architecture toward indoor environmental quality control, aligned with EU EPBD-driven building automation requirements.

APPLIED & INDUSTRY EXPERIENCE

HR Automation Head & Developer — Persian Way Company 2024 – Present

- Lead development of AI-powered HR automation systems (resume screening, ATS, RAG-based candidate matching) using LangChain, Pinecone, FastAPI, and Docker; deployed system reaches 92% matching accuracy and cuts screening time by 60%.

Instructor — Codeyad Academy

2025 – Present

- Teach AI engineering, data science, and ML/DL deployment (MLOps) to 11,000+ students, emphasizing the transition from theory to production-grade systems.

TECHNICAL SKILLS

- **Machine Learning & Deep Learning:** PyTorch-equivalent workflows, TensorFlow, Keras, Scikit-learn, Federated Learning (FedProx), Differential Privacy (Opacus), Reinforcement Learning, Statistical Modeling
- **AI Engineering:** LangChain, Hugging Face, Vector Databases (Pinecone, Qdrant, Chroma, Weaviate), LLM APIs, Retrieval-Augmented Generation
- **MLOps & Deployment:** Docker, FastAPI, MLflow, GitHub Actions (CI/CD), edge/offline deployment
- **Languages & Tools:** Python, SQL, C, C++, Git, Jupyter, Google Colab

LANGUAGES

Persian — Native | English — Advanced (IELTS Academic currently in progress; results expected by end of November 2026) | German — A2 (actively studying toward B1)

REFERENCES

Available upon request.