Ahmadreza Farvardin

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EDUCATION

University of Tehran Tehran, Iran
B.Sc. in Mathematics (Major) & Minor in Computer Science Expected: June 2027
GPA: Mathematics — 17.80/20, Computer Science — 18.87/20
Key Coursework: Linear Algebra, Machine Learning, Nonlinear Programming, Numerical Analysis, Probability & Statistics

TECHNICAL SKILLS

Programming: Python, C/C++, MATLAB
ML/DL Frameworks: PyTorch, TensorFlow, Scikit-learn, NumPy, Pandas, OpenCV
Mathematics: Optimization, Linear Algebra, Probability, Statistical Modeling, Numerical Methods
Tools: Git, Linux, JupyterLab, LaTeX, VS Code
Languages: Persian (Native), English (Professional Working Proficiency)

SELECTED PROJECTS

Mathematical Expression Recognition System (2024)
Machine Learning Final Project, University of Tehran
- Built a deep learning pipeline for Persian handwritten mathematical expression recognition.
- Designed components for detection (YOLOv8, Faster R-CNN), clustering (K-Means/DBSCAN), and recognition (CRNN + CTC loss).
- Achieved 92.3% mAP on detection and 54.35% recognition accuracy; implemented semi-supervised learning for improvement.
- Technologies: Python, PyTorch, OpenCV, NumPy, Pandas

Machine Learning Coursework Repository (2024)
Course Projects — Machine Learning, University of Tehran
- Implemented core ML algorithms from scratch and with modern frameworks: Naive Bayes, Ridge/Logistic Regression, AdaBoost, PCA, GMM.
- Performed feature selection, ensemble learning, clustering, and neural network experiments.
- Technologies: Python, NumPy, Pandas, Scikit-learn, TensorFlow, Matplotlib

Nonlinear Programming Assignments (2024)
Course Projects — Nonlinear Programming, University of Tehran
- Implemented gradient descent, Newton's method, and regularized least squares from scratch.
- Explored optimization for polynomial regression, ridge regression, SVMs, and Gamma regression.
- Technologies: Python, cvxpy, NumPy, Matplotlib, statsmodels

Advanced Programming Projects (2023)
Object-Oriented Programming Course
- Developed multiple OOP-based systems: Financial Management, Leitner System, Parking Management, and UTaste web app.
- Applied inheritance, encapsulation, and polymorphism principles.
- Technologies: C++, Python, JavaScript, HTML/CSS

ACHIEVEMENTS

- First Place in Quera Competence for the Final Machine Learning Project

RESEARCH INTERESTS

Generative Models, Computer Vision, NLP, Large Language Models, Deep Learning Theory