Kamyar **Moradian Zehab**

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Education

IUST(Iran University of Science and Technology) (Ranked 4th among Iran universities based on QS Ranking)

Tehran, Iran

B.Sc. in Computer Engineering

Sep. 2020 - Feb. 2025 (Expected)

- Overall Cumulative GPA: 3.98 (19.15/20 in Iranian Scale)
- Cumulative GPA of the Last Two Years: 3.96 (19.14/20 in Iranian Scale)
- Thesis Title: Application of Artificial Intelligence in Virtual Reality (Under Preparation)

Research Interests

- **Machine Learning**
- **Data Science**
- **Artificial Intelligence**
- **Natural Language Processing**
- **Computer Vision**
- **Robotics**

Selected Courses

Fundamentals of Computer Vision	20 / 20	A+	**Engineering Probability and Statistics**	20 / 20	A+
Deep Learning	20 / 20	A+	**Operating Systems**	20 / 20	A+
Natural Language Processing	20 / 20	A+	**Data Structures**	20 / 20	A+
Artificial Intelligence	19.56 / 20	A+	**Graph Theories and Algorithms**	19.25 / 20	A+
Signals and Systems	19.75 / 20	A+	**Research method and presentation**	18.5 / 20	A+

Selected Academic Projects

Anti-Spoofing System for Facial Recognition | GitHub

IUST University

Fundamentals of Computer Vision Course Project

Spring 2024

- Description: Developed a real-time facial spoofing detection system using two distinct approaches. The first approach combined Feature Extraction, Principal Component Analysis (PCA), and Support Vector Machine (SVM) to effectively reduce data dimensionality while maintaining high classification accuracy. The second approach utilized CNNs for deep learning-based spoof detection, allowing the model to learn complex features directly from raw images. Evaluated both methods, highlighting the strengths and trade-offs between traditional machine learning and modern deep learning techniques.

Sentiment Analysis on Persian Text Using Natural Language Processing (NLP) | GitHub

IUST University

Deep Learning Course Project

Fall 2023

- Description: Developed a sentiment analysis model for Persian text, detecting six key emotions—Anger, Fear, Happiness, Sadness, Wonder, and Hatred—using the XLM-RoBERTa transformer model. Preprocessed the text with NLP techniques and fine-tuned the model on the ArmanEmo dataset, achieving 75.23% accuracy, among the top accuracies of class. Conducted experiments to validate the model's robustness and compared performance across different architectures.

Katyusha - A Course Registration Assistant for Students | GitHub

IUST University

System Analysis and Design Course Project | Software Engineering Course Project

Mar. 2023 - Apr. 2024

- Description: Developed a comprehensive system to assist university students in selecting units for the next semester.
- Additional Details:
    - Developed a system to streamline university unit selection with a Docker-based isolated development environment and automated CI/CD.
    - Built scalable backend services using Django and managed a PostgreSQL database.
    - Created a web crawler with AI-based CAPTCHA bypass for data extraction.
    - Integrated social media features, including chat, posts, and user follow options.
    - Implemented email and Telegram notifications for unit availability updates and designed RESTful APIs for seamless frontend interaction.

AI-Powered Solution for Mountain Car Problem | GitHub

IUST University

Artificial Intelligence Course Project

Fall 2023

- Description: Developed and implemented a reinforcement learning-based agent to solve the Classic Mountain Car Problem, a well-known challenge in control theory and artificial intelligence, using Q-learning and other techniques to optimize the car's performance in reaching the hill's peak. The project involved implementing the solution in Python, optimizing for speed and convergence, and conducting extensive testing to ensure robustness. Hyperparameter tuning led to significant improvements in learning efficiency and solution optimality.

Accelerator Hardware Implementation for CNNs | **GitHub** *IUST University*

Computer Architecture Design Course Project *Fall 2023*

- Description: Designed and implemented a VHDL-based hardware accelerator for CNNs optimizing performance for real-time applications. Conducted extensive testing to ensure accuracy and reliability.
- This project was inspired by RASHT: A Partially Reconfigurable Architecture for Efficient Implementation of CNNs published in IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2022.

Teaching Experience

Teaching Assistant *IUST University*

School of Computer Enginnering *Feb 2021 - Present*

Operating Systems	Course Instructor: Dr. Reza Entezari-Maleki	*Spring 2024*
Artificial Intelligence	Course Instructor: Dr. MohammadReza Mohammadi	*Fall 2023*
Computer Architecture	Course Instructor: Dr. Hakem Beitollahi	*Spring 2023*
Algorithm Design & Analysis	Course Instructor: Dr. Marzieh Malekimajd	*Spring 2023*
Compiler Design Principles	Course Instructor: Dr. Saeed Parsa	*Spring 2023*
Theory of Languages & Machines	Course Instructor: Dr. Reza Entezari-Maleki	*Spring 2023*
Logic Circuits Design	Course Instructor: Dr. Hajar Falahati	*Fall 2022*
Data Structures	Course Instructor: Dr. Hussain Rahmani	*Fall 2022*
Advanced Programming	Course Instructor: Dr. Marzieh Malekimajd	*Spring 2022*
Discrete Mathematics	Course Instructor: Dr. Vesal Hakami	*Spring 2022*

Work Experience

Hamkaran System *Tehran, Iran*

Backend Developer *Mar. 2023, Jul. 2023*

Hamkaran System is a prominent Iranian software company specializing in enterprise resource planning (ERP) solutions, providing business management software to various industries across Iran.

- Gained foundational knowledge in C# and the .NET Framework, focusing on building robust and scalable applications.
- Participated in the development of the Fanoos Project, a .NET ASP WebForm application.

Digikala *Tehran, Iran*

Bootcamp Participant *Jul. 2022, Oct. 2022*

Digikala is Iran's leading e-commerce platform, similar to Amazon, offering a wide range of products, including electronics, fashion, and groceries. It's one of the largest online retailers in the Middle East.

- Developed a strong understanding of algorithms and data structures, essential for efficient problem-solving in software development.
- Gained expertise in database design and management, optimizing database architectures.
- Applied practical software engineering principles, including SOLID and design patterns, for scalable code.
- Acquired knowledge of network fundamentals and protocols, enhancing software development capabilities.
- Gained hands-on experience with the PHP Symfony Framework and collaboratively implemented an e-commerce platform for an online store.

Honors & Awards

Ranked **3rd** GPA among class of 90 undergraduate students in the Computer Engineering Department of IUST University *Sep. 2020 - Present*

Ranked **within the top 0.5% (729th)** in the Iranian University Entrance Exam (Konkoor-e-Sarasari) for Bachelor's Study among more then 155,000 participants *Jul. 2020*

Certificates

Convolutional Neural Networks	Coursera, DeepLearning.AI	*Mar. 2024*
Sequence Models	Coursera, DeepLearning.AI	*Feb. 2024*
Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and Optimization	Coursera, DeepLearning.AI	*Oct. 2023*
Structuring Machine Learning Projects	Coursera, DeepLearning.AI	*Oct. 2023*
Neural Networks and Deep Learning	Coursera, DeepLearning.AI	*Sep. 2023*
Unsupervised Learning, Recommenders, Reinforcement Learning	Coursera, DeepLearning.AI, Standford	*Sep. 2023*
Advanced Learning Algorithms	Coursera, DeepLearning.AI, Standford	*Sep. 2023*
Supervised Machine Learning: Regression and Classification	Coursera, DeepLearning.AI, Standford	*Aug. 2023*
Linear Algebra for Machine Learning and Data Science	Coursera, Deeplearning.AI	*Sep. 2023*
Capstone: Retrieving, Processing, and Visualizing Data with Python	Coursera, University of Michigan	*Sep. 2022*
Using Databases with Python	Coursera, University of Michigan	*Sep. 2022*
Using Python to Access Web Data	Coursera, University of Michigan	*Sep. 2022*
Python Data Structures	Coursera, University of Michigan	*Aug. 2022*
Programming for Everybody (Getting Started with Python)	Coursera, University of Michigan	*Aug. 2022*
Algorithms on Graphs	Coursera, UC, SanDiego	*Jul. 2022*
Data Structures	Coursera, UC, SanDiego	*Feb. 2022*
Algorithmic Toolbox	Coursera, UC, SanDiego	*Sep. 2021*

Skills

Programming Languages	**Python, C#, SQL** | C/C++, PHP, VHDL, Bash
Frameworks	**Django, Django-Rest** | ASP.NET, ASP.NET Core
Libraries	**Pytorch, Keras, TensorFlow, Scikit-Learn, Numpy, Pandas, NLTK, Transformers(HuggingFace), Datasets(HuggingFace), Diffusers(HuggingFace)**
Tools and Platforms	**Git, Postman, PostgreSQL, SQL Server, Proteus** | Linux(Ubuntu), Unity, WireShark, ANTLR

Languages

Persian	Native
English	Higher-Intermediate, TOEFL iBT is going to be taken on NOV. 2024

References

Best reference

Department of Superiority

University of the Universe

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