Kamyar **Moradian Zehab**

(+98) 903-757-6304 | ✉ kamyar_moradian@comp.iust.ac.ir | KamyarMoradian | kamyar-moradian

Education

IUST(Iran University of Science and Technology) (Ranked 4th among Iran universities) *Tehran, Iran*

B.Sc. in Computer Engineering
Sep. 2020 - Feb. 2025
(Expected)

- Overall Cumulative GPA: 3.98 (19.15/20.0 in Iranian Scale)
- Cumulative GPA of the Last Two Years: 3.96 (19.14/20.0 in Iranian Scale)
- Thesis Title: Application of Artificial Intelligence in Virtual Reality (Under Preparation)

Ario Mosallah Nejad High School *Mashhad, Iran*

Diploma in Mathematics and Physics Discipline
Sep. 2017 - Jul. 2020

- Overall Cumulative GPA: 19.80/20.0 in Iranian Scale

Research Interests

- **Machine Learning**
- **Deep Learning**
- **Computer Vision**
- **Scene Editing and Manipulation**
- **Generative Models (Diffusion Models)**
- **Object Detection and Segmentation**

Selected Courses

Fundamentals of Computer Vision	20 / 20	A+	Operating Systems	20 / 20	A+
Deep Learning	20 / 20	A+	Data Structures	20 / 20	A+
Natural Language Processing	20 / 20	A+	Differential Equations	19.5 / 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+
Principles of Compiler Design	20 / 20	A+	Advanced Programming	20 / 20	A+
Engineering Probability and Statistics	20 / 20	A+	Computer Architecture	19.5 / 20	A+

Selected Academic Projects

Retrieval-Augmented Generation System | Python, HuggingFace, Pandas | GitHub *IUST University*

Fundamentals of Natrual Language Processing Course Project
Spring 2024

- Description: Implemented Retriever and Generator components for three RAG systems using distinct models as generators. Evaluated their performance and compared them together on a medical question answering dataset.

Anti-Spoofing System for Facial Recognition | Python, Tensorflow, OpenCV | GitHub *IUST University*

Fundamentals of Computer Vision Course Project
Spring 2024

- Description: Developed a facial spoofing detection system using two approaches: 1) Feature Extraction with PCA and SVM, 2) CNN-based deep learning. Evaluated and compared both methods, highlighting trade-offs between traditional and modern techniques.

Sentiment Analysis on Persian Text | Python, PyTorch, HuggingFace, Pandas | GitHub *IUST University*

Deep Learning Course Project
Fall 2023

- Description: In a team of two, we developed a Persian sentiment analysis model using XLM-RoBERTa model to detect six emotions. Preprocessed data with NLP techniques and fine-tuned the model on the ArmanEmo dataset, achieving 75.23% accuracy, among the top in class. Conducted experiments to validate the model's robustness and compared performance across different architectures using distinct models.

Katyusha - A Course Registration Assistant for Students | Python, Django, Tensorflow, Selenium | GitHub *IUST University*

System Analysis and Design Course Project | Software Engineering Course Project
Mar. 2023 - Apr. 2024

- Description: In a group of seven, we 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 | Python, Numpy | 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. Implemented the solution in Python, optimized for speed and convergence, and conducted extensive testing. Performed hyperparameter tuning to improve learning efficiency and solution optimality.

Accelerator Hardware Implementation for CNNs | VHDL, Python | 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, Jun. 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.

- Description: Acquired foundational knowledge in C# and .NET Framework. Contributed to the development of 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.

- Description: Developed strong skills in algorithms, data structures, and database design. Applied software engineering principles like SOLID and design patterns. Enhanced knowledge of network fundamentals and gained experience with the PHP Symfony Framework by collaboratively implementing an e-commerce platform.

Honors & Awards

Ranked **3rd** GPA among class of 90 undergraduate students in the Computer Engineering Department of IUST University	*Jul. 2024*
Outstanding student of the annual celebration of the university's educational excellence (ranked 2nd among the Computer Engineering students)	*Feb. 2023*
Ranked **within the top 0.5% (491th)** 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*
AI for Everyone	Coursera, Deeplearning.AI	*Jul. 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, Matlab, Bash
Frameworks	**Django, Django-Rest** | ASP.NET, ASP.NET Core
Libraries	**PyTorch, Tensorflow, Numpy, Pandas, OpenCV, Transformers(HuggingFace), Datasets(HuggingFace), Diffusers(HuggingFace)** | NLTK, Scikit-Learn
Tools and Platforms	**Git, Postman, PostgreSQL, SQL Server, Docker, Proteus** | Linux(Ubuntu), Unity, WireShark, ANTLR

Languages

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

References

Dr. Reza Entezari-Maleki
Assistant Professor
Department of Computer Engineering
📱 (+98) 21-7322-5342
✉ ENTEZARI@IUST.AC.IR