TARA SETAREH

Research Interests: Machine Learning, Deep Learning- Computer Vision, 3D Modeling
Location: Tehran, Iran
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EDUCATION

BSc. Computer Engineering Sept. 2022-Jan. 2026 (Expected)
Iran University of Science and Technology (IUST), Iran — (ranked among the top 5 industrial universities in the country)
GPA: 18.01/20 (3.82/4)
Research Interests: Artificial intelligence- Machine Learning- Deep Learning- Computer Vision
Thesis: "Using Online Machine Learning for Predicting Auto-Scaling in Mobile Edge Computing"
Key Courses: Artificial intelligence(20/20), Fundamentals of Computational Intelligence(19.5/20), Information Retrieval(16.64/20)

RESEARCH EXPERIENCE

Undergraduate Research Assistant, Cloud Computing Lab, IUST (Supervisor: Dr. Mehrdad Ashtiani) 2023 – Present

- Developed online ML and federated learning algorithms for auto-scaling in mobile edge computing.
- Designed resource optimization strategies that improved system responsiveness in simulated MEC environments.
- Conducted literature review on distributed learning trends, informing lab's ongoing MEC research.

PUBLICATIONS & TECHNICAL WRITING

- T. Setareh, M. Ashtiani. Using Online Machine Learning for Predicting Auto-Scaling in Mobile Edge Computing. [Manuscript in Preparation, 2025]
- Self-Supervised Clustering of Medical Images Using EfficientNet and KMeans. Medium, 2024. Available online: [link]

ACADEMIC PROJECTS

1. **Using Online Machine Learning for Predicting Auto-Scaling in Mobile Edge Computing**
   Built a real-time ML solution for auto-scaling in mobile edge computing, reducing resource waste and enhancing service reliability.[link]
2. **Self-Supervised Clustering of Medical X-Ray Images Using EfficientNet and KMeans**
   Developed a self-supervised pipeline for chest X-ray grouping using EfficientNet features and KMeans clustering, achieving effective separation without labeled data.[link]
3. **TF-IDF-Based Text Representation and Clustering in Python**
   Built a Term Frequency–Inverse Document Frequency (TF-IDF) model for text representation and dimensionality reduction. Applied clustering techniques for text data visualization and pattern extraction.[link]
4. **Drug–Target Interaction Prediction with ML/DL**
   Built models using SVM, Random Forest, and deep learning (MLP, GNN, GCN) to predict drug–target interactions, supporting efficient drug discovery. [link]
5. **Information Retrieval System using Web Scraping and Text Processing**
   Built an IR pipeline by crawling and preprocessing Reddit posts, applying NLP techniques to enable effective search and retrieval of news content. [link]

TEACHING EXPERIENCE

Undergraduate Teaching Assistant | Iran University of Science and Technology

- Course: **“Discrete Mathematics”,** Instructed by: **Dr. Vesal Hakemi** [Spring 2023]
- Course: **“Logic Circuits”,** Instructed by: **Dr. Amir Mahdi Hosseini Monazzah** [Fall 2023]
- Course: **“Computer architecture”,** Instructed by: **Dr. Amir Mahdi Hosseini Monazzah** [Spring 2024]
- Course: **“Discrete Mathematics”,** Instructed by: **Dr. Somayeh Davoodabadi** [Spring 2024]
- Course: **“Designing digital computer systems”,** Instructed by: **Dr. Hakem Beitollahi** [Spring 2024]
- Course: **“Data Structure”,** Instructed by: **Dr. Hossein Rahmani** [Fall 2024]
- Course: **“Design Analysis and algorithms”,** Instructed by: **Dr. Farzaneh Baghbani** [Spring 2025]
- Course: **“Design Analysis and algorithms”,** Instructed by: **Dr. Narges Baharloo** [Spring 2025]
- Course: **“Theory of Language and Automates”,** Instructed by: **Dr. Farzaneh Baghbani** [Spring 2025]
- Course: **“Theory of Language and Automates”,** Instructed by: **Dr. Reza Entezari Maleki** [Spring 2025]

HONORS & AWARDS

- Ranked **Top 2%** among 142,000 participants in the Iranian National University Entrance Exam [Aug. 2021]
- Ranked among the top 20 students in the B.Sc. Computer Engineering program at IUST [Apr. 2025]
- Honorary member of the Scientific Association of the Computer Engineering Department for one year [Mar. 2024]

TECHNICAL SKILLS

- Programming : **Python, C/C++, C# (WPF), MATLAB, JavaScript, TypeScript, SQL**
- Machine Learning & AI : **Neural Networks, CNN, Online Learning, Federated Learning, PyTorch, TensorFlow**
- Web Development : **HTML, CSS, React.js, Material-UI, Figma**
- Tools: **Git/GitHub, PyCharm, Xilinx ISE, Proteus**
- Systems: **Cloud Computing, Mobile Edge Computing, IoT Systems Design**
- Core Competencies: **Algorithms, Data Structures, Computer Architecture**

REFERENCES

Dr. Mehrdad Ashtiani (m_ashtiani@iust.ac.ir)
Assistant Professor, Department of Computer Engineering, Iran University of Science and Technology (IUST)

Dr. Hakem Beitollahi (Beitollahi@iust.ac.ir)
Assistant Professor, Department of Computer Engineering, Iran University of Science and Technology (IUST)

Dr. Farzaneh Baghbani (farzane.ghayour@gmail.com)
Assistant Professor, Department of Computer Engineering, Iran University of Science and Technology (IUST)

Dr. Mohammad Bahrani (bahrani@atu.ac.ir)
Assistant Professor, Faculty of Statistics, Mathematics and Computer, Allameh Tabataba’i University