Danial Ahangarani

*Researcher at the **Robust/Interpretable ML Lab***

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Homepage

My primary research interest lies in machine learning. Currently, I am concentrating on integrating medical imaging modalities and omics data to design predictive models for pancreatic ductal adenocarcinoma management.

EDUCATION

- Master's degree in Computer Engineering, Sharif University of Technology. (GPA: 3.87)
- Bachelor's degree in Computer Science (Minor: Cinema-Directing), Shahid Beheshti University and Applied Science & Tech University.

HONORS & AWARDS

- 2021 Ranked 56 among more than 30,000 participants in the nationwide university entrance exam for Computer Engineering.
- 2021 Ranked 45 among over 5,000 participants in the nationwide university entrance exam for Computer Science.

POSITIONS

Research Assistant

2021 - 2024: Research Assistant at the **Sharif University of Technology**

During my master's degree, I was involved in a collaborative research project between the Robust/Interpretable ML Lab and the Organic Chemistry Lab. The project focused on applying deep learning and natural language processing techniques for the prediction of drug-target binding affinity. I contributed to the development of novel methodologies to bridge the gap between computational and experimental drug discovery approaches. I was actively engaged in interdisciplinary efforts to advance the field of pharmaceutical science through cutting-edge technologies.

Teaching Assistant

- Spring 2023: Data Structures and Algorithms at the Sharif University of Technology.
- Fall 2023: Intelligent Processing of Biomedical Images at Sharif University of Technology.

PUBLICATIONS

Ahangarani, Danial, Mohammad Shirazi, and Navid Ashraf. "Investigating Deep Neural Network Architecture and Feature Extraction Designs for Sensor-based Human Activity Recognition." Proceedings of the 2023 7th International Conference on Internet of Things and Applications (IoT), IEEE, 2023, pp. 1-6. **(GitHub)**

PROJECTS

Human Activity Recognition

- Investigation Deep Neural Network in Human Activity Recognition (**GitHub**)

Machine Learning

- Breast Cancer Prediction (**GitHub**)
- Estimating obesity levels based on eating habits and physical conditions of an individual (**GitHub**)
- Spectral Clustering (**GitHub**)
- Liver Disease Classification (**GitHub**)

Deep Learning

- Classification for Brain Cancer MRI Images (**GitHub**)
- CNN-based model for a multi-class classification task, brain abnormality classification (**GitHub**)
- Image Captioning (**GitHub**)
- Image Semantic Segmentation (**GitHub**)
- Medical Image Registration Using Voxelmorph (**GitHub**)
- Multilayer Perceptron for DOROTHEA (a drug discovery dataset) (**GitHub**)
- Single-Cell RNA Sequencing Analysis (**GitHub**)
- Generating MNIST digits with variational autoencoder (**GitHub**)
- Classification and Interpretation for Xray Images (**GitHub**)

Signal Processing

- Exploring methods for sharpening images (**GitHub**)

Artificial Intelligence

- **Connect Four** games (**GitHub**)
- Tackling the knapsack problem with a genetic algorithm (**GitHub**)
- N-gram Language Model (**GitHub**)

- Naive Bayes Classifier (**GitHub**)

Structural Bioinformatics

- Procedures to work with protein pdb file in tcl language (**GitHub**)

CERTIFICATES

- Machine Learning (**Certificate**)
  - Supervised Machine Learning: Regression and Classification (**Certificate**)
  - Advanced Learning Algorithms (**Certificate**)
  - Unsupervised Learning, Recommenders, Reinforcement Learning (**Certificate**)
- Advanced Python programming and object-oriented thinking course (**Certificate**)

SKILLS

- Python
  - TensorFlow, Keras, PyTorch, and Hugging Face
  - Numpy and Pandas
  - Scikit-learn, SciPy, OpenCV, NLTK
  - Matplotlib, Plotly

- Intermediate R, Java, and C Knowledge
- MySQL
- Git/ GitHub
- Probability and Statistics
- Linux, Windows, OS X
- Latex and Microsoft Office
- Academic Writing