Danial Ahangarani

Contact Details

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Educational Email: **daniahangarani@sharif.edu**

Links: **Homepage**, **GitHub Page**

Education

2021–2024: Master's degree in Computer Engineering, Sharif University of Technology.
2017–2020: Bachelor's degree in Cinema-Directing, Applied Science & Tech University.
2012–2017: Associate's degree in Computer Science, Shahid Beheshti University.

Teaching Assistance

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

Research Assistance

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

> Currently involved in a collaborative research project between the Robust/ Interpretable ML Lab and Organic Chemistry Lab, focusing on applying deep learning and natural language processing techniques to predict drug-target binding affinity.
> Contributing to developing novel methodologies to bridge the gap between computational and experimental drug discovery approaches. Actively engaged in interdisciplinary efforts to advance the field of pharmaceutical science through cutting-edge technologies.

Papers

Investigation Deep Neural Network Architecture and Feature Extraction Designs for Sensor-based Human Activity Recognition, In Proceedings of Seventh International Conference on Internet of Things and Applications (IoT 2023). (Accepted)(**Github Link**)

Projects

Human Activity Recognition

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

Machine Learning

- Random Forest and XGBoost model on breast cancer dataset. (**GitHub**)
- Estimating obesity levels based on eating habits and physical conditions of an individual. (**GitHub**)
- Spectral Clustering. (**GitHub**)
- SVM classification for liver disease. (**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**)

My 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

Interests

- Deep Learning
- Reinforcement Learning
- NLP (Natural language processing)
- Image Processing
- Mobile Computing
- Cyber-Physical Systems
- Drug Discovery
- Analyzing genomic data
- Computational Chemistry

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.

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**)