Maryam KafiKang

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Qualifications

- **3+** years experience developing machine learning and deep learning algorithms on biomedical datasets, including genomic, textual, and numerical data.
- Ability to develop high quality code (Python, C++, SQL) through multiple research projects

Education

University of Connecticut — Mansfield, Connecticut
PhD in Computer Science — January 2024
Supervisor: **Dr. Pavel Skums**

University of Rhode Island (URI) — Kingston, Rhode Island
Master of Science in Computer Science; GPA: 3.92/4.0 — August 2023
Dissertation: Analysis of Turkey Reovirus using Machine Learning
Supervisor: **Dr. Abdeltawab Hendawi**

University of Isfahan (UI) — Isfahan, Iran
Bachelor of Engineering in Computer Engineering — June 2020
Supervisor: **Dr. Hossein Karshenas**

Skills

- **Languages/Tools:** Python, C++, SQL, R, Git, LaTeX
- **Libraries/Frameworks:** PyTorch, TensorFlow, Scikit-Learn, Keras, Numpy, Pandas, Matplotlib
- **Machine learning:** Large Language Models (GPT, BERT), Deep learning(RNN, CNN, GCN)
- **Certificates:** Google Cloud for Big data, Neural Networks and Deep Learning

Selected Courses Completed

- **Data Science Courses:** Data Mining, Database, Data Management Systems
- **Machine Learning Courses:** Artificial Intelligence, Machine Learning, Deep Learning

Publication

[1] **KafiKang, Maryam, et al.**"Analysis of Turkey Reovirus using Machine Learning." *Submitted in Journal of Briefings in Bioinformatics*, (2023)

[2] **KafiKang, Maryam**, Abdeltawab Hendawi. "Drug-Drug Interaction Extraction from Biomedical Text using Relation BioBERT with BLSTM." *Published in Machine Learning and Knowledge Extraction*, (2023)

Conference Presentation

[1] Cetera, Anna , **Maryam KafiKang**, Demetrios Petrou, Reza Abiri. "Emergence of Neural Activity in Hand Pre-shaping to Grasp Using Noninvasive EEG Methods." *Presented in Society for Neuroscience Conference*, (2022)

Research Experience

Pharmacy Department, URI, Kingston, RI *June - September 2023*

- Efficiently managed and processed a large SAS dataset and trained and evaluated regression and classification models to predict children's developmental outcomes
- achieving a remarkable 80% classification model accuracy, the first successful application of machine learning models to this dataset

Department of Computer Science, URI, Kingston, RI *August 2023*
MS.c Thesis: *"Analysis of Turkey Reovirus using Machine Learning"*

- Detecting unforeseen Reovirus pattern in Turkey Genome sequences using clustering algorithms
- Developing a deep learning model to detect and classify types of Reovirus in dataset

Department of Computer Science, URI, Kingston, RI *2021*
Research Project: *"Sentimental Analysis of Coronavirus Tweets"*

- Performed data pre-processing including data cleaning, tokenization, and sentence embedding using Fastai
- Developed a Deep Learning based classifier containing AWD-LSTM for the text classification

Department of Computer Science, URI, Kingston, RI *2021*
Research Project: *"Hotel Management System"*

- Created ER-diagram and a database of Hotel Management System Using MySQL
- A UI web design for this system using HTML, CSS, JavaScript, and PHP

Department of Computer Science, URI, Kingston, RI *2020*
Research Project: *"Drug-Drug Interaction Extraction from Biomedical Text using Relation BioBERT with BLSTM"*

- Developed a deep learning Model to classify types of interaction between drugs in medical texts
- This model used Relation BioBert to embed the sentences and the drug names
- The developed model outperformed the state of art models in DDIs extraction

Work Experience

Exoskeleton AI Specialist | SAAR Inc., USA *July - September 2023*

- Collaboratively developed and implemented a neural network controller for RoboChair's AI-driven STS (seat to stand) exercise equipment, resulting in significant performance improvements in terms of accuracy, speed, and safety. Met all deadlines and demonstrated strong teamwork and time management skills.

Research Intern | Translational Neurorobotics Laboratory *May - September 2022*

- Designed an assistive neurorobotic device embedded with real-time machine learning pipelines to be used for disabled people
- Developed a Graphic User Interface (GUI) as the neural interface to collect brainwave data in synchrony with events in a hardware platform for reach-to-grasp tasks
- Preprocessing the collected brainwave data from the experiment and applying machine learning methods to classify signals into different grip types

Teaching Assistant | Department of Computer Science, URI, Kingston, RI *2021 - 2023*

- Grading essays, Manage lab assistants, Classes taught totaled over 100 undergrad students, Mentoring undergrad engineering students for their senior design projects

Honors

- Exempted from M.Sc. Entrance Exam in Iran as a Talented Student
- Ranked 1st in FanAvard Skills Competition
- Among the top 0.3% of the participants in the Iranian National University Entrance Exam

Teaching Experience

Department of Computer Science, URI, Kingston, RI
Teaching Assistant

- Data Structures and Abstractions
- Computer Problem Solving For Science and Engineering
- Program Language Implementation
- Database Systems
- Fundamentals of Programming Languages

Department of Computer Engineering, UI, Isfahan, Iran
Teaching Assistant

- Discrete Mathematics
- C++ Programming