Mohammadsepehr Karimiziarani

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Tuscaloosa, Alabama

WORK EXPERIENCE

- **Alabama Water Institute,** Research Software Engineer - Data Scientist, May 2023 - Present
  - Developed a Custom AI chat bot using OpenAI API based on the organization's product codes and documentation to assist users and customers in utilizing the products and answering their questions.
  - Developed a Python library to generate National Water Model data URLs and created CI/CD pipelines to automate the publishing process for changes made in the GitHub repository
  - Taught a summer course on data science to REU students
  - Assisted with DevOps processes, on-premises and cloud infrastructure for the NextGen framework community release for the National Water Model, and provided user support
- **CCHR, The University of Alabama,** Graduate Research Assistant , August 2019 - May 2023
  - Mined more than 100 millions of natural disaster related Tweets using Twitter API and analyzed them using NPL techniques
  - Developed a deep learning LSTM classifier to classify disaster related tweets into 6 predefined humanitarian categories and 12 emotion classes
  - Optimized and parallelized computationally intensive AI/ML tasks for efficient execution on High-Performance Computing (HPC) servers.
  - Collaborated with a team of researchers and Published the results of Twitter data analysis in 6 high impact academic journals.
  - Designed web based visualization dashboards using Tableau, Javascript, HTML, and CSS
- **Remote Sensing Center, The University of Alabama,** Software Engineering Intern, May 2019 - August 2019
- **Agrin Systems,** Software Engineer, May 2016 - August 2018

EDUCATION

- **The University of Alabama**, Tuscaloosa, Alabama, USA, August 2019 - May 2023.
  Ph.D. Computer Science
- **The University of Alabama**, Tuscaloosa, Alabama, USA, August 2019 - May 2021.
  M.Sc. Computer Science
- **Sharif University of Technology** , Tehran, Iran, August 2012 - May 2017.
  B.Sc. Computer Science

SKILLS

- **Technical Skills**: Large Language Models (LLMs), Generative AI, Machine Learning, Deep Learning, NLP, Python(NumPy, Pandas, Scikit-learn, Keras), High Performance Computing, Social Media Analytics, Tableau, Git, DevOps, CI/CD, HTML, CSS, JavaScript, React, UI/UX, Responsive Web Design, Test-Driven Development, Front-End Web Development, Web3, Solidity, Smart Contracts, Blockchains

CERTIFICATES AND SPECIALIZATIONS

- **Generative AI-Powered Applications with Python**, IBM
- **Generative AI with Large Language Models Certificate**, AWS, Deeplearning.ai
- **Social Media Data Analytics Certificate**, Coursera
- **DevOps on AWS Specialization** (4 course certificates), Amazon Web Services, Coursera
- **More than certified in Terraform certification**, Hashicorp
- **Front-End Developer Professional Specialization** (9 course certificates), Meta
- **Blockchain Specialization** (4 course certificates), Coursera

PUBLICATIONS

- **Mohammadsepehr Karimiziarani**, and Hamid Moradkhani. Natural Language Processing Insights from the X (formerly Twitter) Sphere: A Comprehensive Analysis of the 2018 California Camp Fire. (2024)

- **Mohammadsepehr Karimiziarani**, and Hamid Moradkhani. Social response and Disaster management: Insights from twitter data Assimilation on Hurricane Ian. International Journal of Disaster Risk Reduction. (2023)

- **Mohammadsepehr Karimiziarani**, Wanyun Shao, Majid Mirzaei, and Hamid Moradkhani. Toward Reduction of Detrimental Effects of Hurricanes using a Social Media Data Analytic Approach: How Climate Change is perceived?. Climate Risk Management. (2023)

- Mostafa Dadashi Firouzjaei, **Mohammadsepehr Karimiziarani**, Hamid Moradkhani, Mark Elliott, and Babak Anasori. MXenes: The two-dimensional influencers. Mater. Today Adv. 13, (2022)

- **Mohammadsepehr Karimiziarani**, Keighobad Jafarzadegan, Peyman Abbaszadeh, Wanyun Shao, and Hamid Moradkhani. Hazard risk awareness and disaster management: Extracting the information content of twitter data. Sustain. Cities Soc. 77, May 2021 (2022), 103577.

- Peyman Abbaszadeh, Hamid Moradkhani, Keyhan Gavahi, Sujay Kumar, Christopher Hain, Xiwu Zhan, Qingyun Duan, Christa Peters-Lidard, and **Sepehr Karimiziarani**. High-resolution smap satellite soil moisture product: Exploring the opportunities. Bull. Am. Meteorol. Soc. 102, 4 (2021)

- Seyed Moslem Shokrolahi and **Mohammadsepehr Karimiziarani**. A deep network solution for intelligent fault detection in analog circuit. Analog Integr. Circuits Signal Process. 107, 3 (2021)