Arman Behnam

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Education

Illinois Institute of Technology — Chicago, IL, USA
Computer Science Ph.D. student; College of Computing, Department of Computer Science — *January 2023 – Present*
Research subject: Graph Neural Networks explanation by causal inference — *Advisor: Binghui Wang*

Relevant coursework: Computer Organization and Assembly Language Programming, Systems Programming, Science of Programming, Software Systems Architectures, and Probabilistic Graphical Models

Iran University of Science and Technology — Tehran, Iran
M.Sc. in Industrial Engineering; ***GPA: 3.44*** — *September 2018 – March 2022*
Dissertation title: "Railway data mining using deep learning with IoT approach"

University of Tehran — Tehran, Iran
B.Sc. in Industrial Engineering; ***GPA: 3.17*** — *September 2014 – July 2018*
Final project: "Integrating modern tools for long-term production planning"

Publications

Artificial intelligence–enabled Internet of Things technologies in modern energy grids
A book chapter from IoT Enabled Multi-Energy Systems, Academic Press, January 2023
- New AI-based IoT frameworks concentrating on architecture, and challenges of energy internet.

Data science leverage and big data analysis for Internet of Things energy systems
A book chapter from "IoT Enabled Multi-Energy Systems", Academic Press, January 2023
- Smart grid intelligence protocols with attention to data-driven decision-making, and real-time data collection.

A data analytics approach for COVID-19 spread and end prediction (with a case study in Iran)
Journal of Modeling Earth Systems and Environment, January 2021
- COVID-19 confirmed, and recovered cases trend prediction in short-time, and long-term scenarios by time series methods fine-tuned by Gaussian functions for a case study of Iran

Meta-Health Stack: A new approach for breast cancer prediction
Healthcare Analytics, November 2022
- An ensemble-based framework for predicting breast cancer with high performance

A Study on IOT Applications and Technologies in Logistics
A book chapter from "Logistics and Supply Chain Management", Healthcare Analytics, December 2020
- Analysis to determine the applications of IOT in logistics such as WSN, RFID, and GIS.

A comparison between different classification algorithms for predicting metastasis in breast cancer
"IIIEC 2021, March 2021
- Comparison of different fine-tuned ML methods for cancer metastasis cases prediction

Research Experience

Graph Neural Network Causal Explanation via Neural Causal Models — Ph.D. Research
Illinois Institute of Technology, January 2023 – November 2023 — *Submitted to CVPR 2024*
- A GNN causal explainer by building causal structure and the corresponding neural causal model for a graph. It outperforms the existing GNN explainers in exactly finding the ground-truth explanations.

Weight-Opt; A novel feature engineering-based framework for optimization — M.Sc. Research
Under review at "Expert systems with applications"
- An iterative optimization framework based on resemble methods enhanced by feature-engineering methods

Academic Experience

"Data privacy and security" CS28 course — Teaching Assistant
Grading programming, and writing assignments, and the final project

"Multiple Variables Statistical Analysis" IE210 course — Teaching Assistant
Grading programming assignments, and Q/A

American Journal of Lifestyle Medicine, SAGE Journals — Editorial Board
My revisions

The Journal of Primary Prevention — Peer Reviewer

Journal of General Internal Medicine — Peer Reviewer

JAMA Network Open — Peer Reviewer

Skills

Languages: C/C++, Java, Python, SQL, MATLAB, R, Assembly programming language, and VBA
Technologies: LLMs, MySQL, Git, Docker, Linux, OpenCV, Scikit-Learn, PyTorch, Keras, TensorFlow, HTML/CSS
Field of study: Neural networks, Causality, Machine Learning

Projects

Pytorch Tutorial | *GitHub* — Step by step tutorial for training NNs and analysis via PyTorch
Stock Prediction Models | *GitHub* — Predicting stock prices via recent deep learning methods
Time Series Models | *GitHub* — Different simple ML-based and NN-based methods used in my research

Certificates

Reinforcement Learning, by University of Alberta (80 hours) — November 2021

Natural Language Processing, by DeepLearning.AI (120 hours) — August 2021

Excel Skills for Data Analytics, by Macquarie University (40 hours) — March 2021

Deep Learning, by DeepLearning.AI (120 hours) — November 2020

Data science and applied statistics, Supervisor: Dr. Yaser Zerehsaz (120 hours) — Spring 2020

Work Experience

Tanzim-Yar (Reg-Tech) Startup Studio — Tehran, Iran
Data Analyst — *April 2021– December 2022, Full-time*
- Developing digital identification process as a third-party product (process engineering) for Fin-Tech purposes.

Mobarakeh Steel Company — Esfahan, Iran
AI Engineer — *November 2020– November 2021, Part-time*
- Deep learning-based bearing fault detection for real-time diagnosis system from raw data.

Jahad-Daneshgahi — Tehran, Iran
Data Science Lecturer — *November 2018– November 2019, Part-time*
- Teaching data science (200 hours): Machine Learning, and Data mining by Python, and R programming languages

References

Binghui Wang — Ph.D. advisor
Illinois Institute of Technology, Department of Computer Science, Assistant Professor