Arman Behnam

Research assistant at Illinois Institute of Technology, Department of Computer Science

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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: Causal Representation Learning; ***GPA: 3.00*** — *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

Graph Neural Network Causal Explanation via Neural Causal Models

18th European Conference on Computer Vision, July 2024 (My first year's Ph.D. Research)

- 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.

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

Invariance in Causal Representation Learning for Domain Generalizations Ph.D. Research
In progress, January 2024 – Now

Causal Explanation from Mild Cognitive Impairment to Dementia Transmission Internship
In progress, May 2024 – Now

Weight-Opt; A novel feature engineering-based framework for optimization M.Sc. Research
Under review at "Expert systems with applications"

- An iterative optimization framework outperformed all ensemble ML methods by 20%

Academic Experience

EHR information extraction by neural networks explanation Mayo Clinic, Rochester, MN, USA
Internship (Department of Artificial Intelligence and Informatics (AI&I)) *May 2024 – August 2024, Full-time*

Grading programming assignments, and the final project Teaching Assistant
"Data privacy and security" CS528, and "Multiple Variables Statistical Analysis" IE210 course

American Journal of Lifestyle Medicine, SAGE Journals Editorial Board

The Journal of Primary Prevention, Journal of General Internal Medicine Peer Reviewer

Work Experience

Tanzim-Yar (Reg-Tech) Startup Studio Tehran, Iran
Data Analyst *April 2021– December 2022, Full-time*

- Developed complete digital identification process product as a third-party product for Fin-Tech regulation

Mobarakeh Steel Company Esfahan, Iran
AI Engineer *November 2020– November 2021, Part-time*

- Developed deep learning-based bearing fault detection software 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

Skills

Languages: C, Java, Python, SQL, MATLAB, R, Assembly programming language, and VBA

Technologies: LLMs, MySQL, Git, Docker, Linux, OpenCV, Scikit-Learn, PyTorch, Pytest, Keras, TensorFlow, PDB, HTML/CSS, ML APIs and SDKs

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 | *GitHub* US stock prices prediction via LSTM, GRU, ensemble, CNN, and attention models

Time Series Models | *GitHub* Implementing ML-based, and NN-based methods for climate changes

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