YOUSEF FEKRI

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EDUCATION

Ph.D. in Computer Science
University of Georgia, Athens, GA, USA *(2021-current)*

Master of Science in Applied Mathematics
Sharif University of Technology, Tehran, Iran *(2011-2013)*

Bachelor of Science in Mathematics
Semnan University, Semnan, Iran *(2007- 2011)*

RESEARCH INTERESTS

Data Science\Big Data

LLM and DNN for Predictive Modeling

Time Series Forecasting

Optimization for Machine Learning

Symbolic Reg. for Scientific Discovery

COMPUTER SKILLS

Programming Languages: Python | Java | Scala | C | C++ | SQL

Technical: Machine Learning | Pytorch | Computer Vision | Transformers | Algorithm | Linux | Data Analysis | Neural Networks | Diffusion Models | Generative Adversarial Networks

WORK EXPERIENCES

Teaching Assistant
Java, Python, Theory of Computing
University of Georgia, Athens, GA, USA *(2021-current)*

Teaching
Mathematics, Geometry, Algebra
Mesbah High School, Tehran, Iran *(2011- 2021)*

SELECTED COURSES WITH GRADES

Algorithms (A) Discrete Mathematics (A) Computer Networks (A) Data Science II (A) Computer Vision with ML (A)

SELECTED PROJECTS

Attention-Based Time Series Models in Scala *(Ongoing)*
Developed Transformers in Scala, achieving functional parity in self-attention and multi-head attention mechanisms with PyTorch implementations. Currently extending to an attention-based model for time series analysis.

Multi-Model Integrated Sentence Similarity Framework *(2023)*
Developed an advanced multi-model computational framework for enhancing sentence similarity assessments in Natural Language Processing, leveraging the COCO dataset for robust training and evaluation.

Fake Image Region Detection and Description in Deepfake Images *(2023)*
Developed and trained a deep learning model for identifying and localizing specific fake regions within facial manipulations, and providing descriptive analysis of manipulated areas, leveraging PSCC-Net and HRNet.

An ARMA Modeling Approach for Estimating Lives Saved by COVID-19 Vaccination in 2021 *(2023)*
Utilized an Autoregressive Moving Average model on 2020 COVID-19 mortality data to estimate lives saved by vaccinations in 2021, optimizing model parameters based on RMSE

PUBLICATIONS

Akbar Mahmoodi Rishakani, Yousef Fekri Dabanloo, Seyed Mojtaba Dehnavi, Mohammad Reza Mirzaee Shamsabad, and Nasour Bagheri. **"A note on the construction of lightweight cyclic MDS matrices."** Int. J. Netw. Secur., 21(2):269–274, 2019

A. M. Rishakani, S. M. Dehnavi, Y. F. Dabanloo and H. Maimani, **"Construction of MDS matrices from minors of an MDS matrix,"** 2015 12th International Iranian Society of Cryptology Conference on Information Security and Cryptology

S. M. Dehnavi, M. R. Mirzaee Shamsabad, A. Mahmoodi Rishakani, and Y. Fekri Dabanloo. **"Efficient MDS diffusion layers through decomposition of matrices."** Cryptology ePrint Archive, Paper 2015/775, 2015. https://eprint.iacr.org/2015/775.