Danial Saber

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EDUCATION

M.Sc. in Computer Science, Ontario Tech University, Oshawa, Canada *2023 – present*

- Supervisor: Dr. Amirali Salehi-Abari
- Relevant courses: Survey in Computer Science Research Topics & Methods, Machine Learning, Affective Data Science, Collaborative Design and Research, IT Security
- Current GPA: 4.10 / 4.33

B.Sc. in Computer Engineering - Software, Kharazmi University, Tehran, Iran *2019 – 2023*

- GPA: 3.72 / 4.00

RESEARCH INTERESTS

- Machine Learning
- NLP
- Deep Learning
- Healthcare in AI
- Graph Neural Networks
- Big Data Analytics

PUBLICATIONS

1- **Saber D**, Salehi-Abari A. Scalable Expressiveness through Preprocessed Graph Perturbations. arXiv preprint arXiv:2406.11714. 2024 Jun 17 - (Accepted in CIKM 2024) - Link

2- Bagherzadeh A, Shahini N, **Saber D**, Yousefi P, Alizadeh SM, Ahmadi S, Shahdost FT. Developing a global approach for determining the molar heat capacity of deep eutectic solvents. Measurement. 2022 Jan 1; 188:110630 - Link

EXPERIENCE

Graduate Research Assistant *Sep 2023 - Present*
SAIN lab, Ontario Tech University, Oshawa, Canada

- Developed SE2P, a novel framework that balances scalability and expressivity in Graph Neural Networks for graph classification, using PyTorch and PyTorch Geometric. Published in ACM CIKM 2024 (25.26% acceptance rate).
- Conducted weekly reading groups to discuss recent Machine Learning papers, focusing on Graph Neural Networks.

Teaching Assistant *Sep 2023 - Present*
Ontario Tech University, Oshawa, Canada

- Big Data Analytics: Conducted tutorials, led programming labs (Python), and graded assignments. Instructor: Dr. En-Shiun Annie Lee.
- Data Structures: Led programming labs (Java), and graded assignments. Instructor: Dr. Razi Iqbal.

Data Analyst (Internship) *Apr 2022 – Aug 2022*
Koosha Tejarat Nopadid, Tehran, Iran

- Developed an interactive performance dashboard for Kharazmi University using Python, MySQL, and Power BI, providing visual representations of teaching, conferences, publications, books, and patents at the professor, department, and faculty levels.

ACADEMIC PROJECTS

Scalable Expressiveness through Preprocessed Graph Perturbations, 2024 - [Code](#)
- Proposed SE2P, a model combining flexibility, scalability, and expressiveness. The approach offers four configuration classes, each offering a unique balance between scalability and generalizability. Extensive experiments were done for graph classification tasks using PyTorch and PyTorch Geometric.

Fake News Detection on Twitter, 2023 - [Code](#)
- Implemented various Graph Neural Network models, including Graph Convolutional Network (GCN), Graph Attention Network (GAT), Graph Isomorphism Network (GIN), and GraphSAGE, to evaluate and compare their performance against Multi-Layer Perceptron models in a graph classification task, where Twitter news and corresponding retweets are represented as graphs.

Vegetable Disease Classification, 2022 - [Code](#)
- Developed a web application using Python (Flask, Tensorflow) and ReactJS to classify various crop diseases using Convolutional Neural Networks.

Brain Tumor Detection, 2022 - [Code](#)
- Proposed a Convolutional Neural Network model based on Transfer Learning to classify brain tumors from MRI images using Python (TensorFlow).

SELECTED TECHNICAL SKILLS

Programming Languages: Python, C++, Java, HTML/CSS.
Frameworks/Libraries (Python): NumPy, Pandas, Matplotlib, Seaborn, SciPy, Sklearn, TensorFlow, Keras, PyTorch, PyTorch Geometric, NetworkX, spaCy, NLTK, Flask, Selenium.
Software: Power BI, Tableau, Apache Spark, Rapid Miner.
Database: MySQL, SQL Server, PostgreSQL.
Version Control and Operation Systems: Git, GitHub, Linux (Ubuntu), Windows.

CERTIFICATES

- Data Science Learning Path, Microsoft Azure, 2024.
- Machine Learning Specialization, Coursera (offered by Stanford University and DeepLearning.AI), 2023.
- Neural Networks and Deep Learning, Coursera, 2022.
- Natural Language Processing, DeepLearning.AI, 2022.
- Introduction to Data Science in Python, Coursera, 2021.

REFERENCES

Amirali Salehi-Abari, Associate Professor, Ontario Tech University
Email: Amirali.Salehi-Abari@ontariotechu.ca

En-Shiun Annie Lee, Assistant Professor, Ontario Tech University, and University of Toronto (Status-only)
Email: annie.lee@ontariotechu.ca