SEPIDEH
NESHATFAR

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Sepideh Neshatfar in

SUMMARY

Motivated fourth-year doctoral student with experience in developing graph neural network frameworks that are enhanced in terms of robustness, efficiency, and performance. Skilled in Python programming and frameworks like PyTorch, DGL, and PyG. Able to use data science and programming skills to successfully manage projects to completion and achieve innovation in computer science.

FIELDS OF INTEREST

- Graph Neural Networks
- Data Science
- Computer Vision

EDUCATION

Ph.D. of Computer Science | University of Maine
DATES FROM 2/2021–5/2025(EXPECTED)

Master of Computer Science | University of Maine
DATES FROM 2/2021–12/2023

Bachelor of Computer Engineering (Information Technology) | Isfahan University of Technology
Dates From 9/2015–5/2020

EXPERIENCE

- **Research Assistant | University of Maine**
DATE FROM 2/2021-5/2021 AND 1/2023-5/2025(EXPECTED)
  - **Developing a domain adaptation framework using Python programming that exploits graph transformer for transferring domain information from source to target.**
  - **Developed a robust subgraph learning framework using Python programming that employs early representations of Graph Convolutional Networks that results in outperformance over other baselines when under several standard attacks.**

- **Developed a graph summarizing framework using Python programming that incorporates labels information using theoretical measurements that addresses the previous works limitations while outperforming them.**
- **Developed an autonomous driving object detection framework that is robust to adverse weather conditions with YOLO backbone and incorporating perceptual loss that outperforms other state-of-the-art baselines.**

▪ **Teacher Assistant | University of Maine**

DATE FROM 2/2021-12/2023

Grading, question answering and lecturing the students of the following courses: Foundation of Computer Science, Programming Languages, Formal Foundation Info Systems, Computer Architecture that resulted in improvement in familiarity with the courses and students' management.

▪ **Teacher Assistant | Isfahan University of Technology**

IN 2017, 2018, 2019

Held weekly C programming lab and evaluated their performance that resulted in improvement in familiarity with the courses and students' management.

▪ **Internship | IUT (Institute of Artificial Intelligence)**

DATES FROM 6/2019– TO 9/2019

Gathered and labeled the input data and developed a CNN-based framework with Python programming that employs NLP techniques to classify the websites based on their contents. It improved my prior knowledge and experience about AI and Machine Learning techniques.

▪ **Bourse Website Crawling| Trade Observation company**

DATES FROM 8/2020– TO 9/2020

Extracted data for bourse analyst to anticipate stock prices with Python programming that utilize regex and website crawling tools to automatize data extraction required for a stock analyzing.

SKILLS

- Python Programming Language
- Deep learning
- PyTorch
- Graph Neural Networks
- Graph Summarization

- Git
- SQL Server
- C programming Language
- C++ Programming Language
- Image Processing

HONORS

- Top 0.01% in The National University Entrance Exam
- Top 2% of students of senior year of high school
- Top 25% of the same field students of senior year of undergraduate education

ACTIVITIES

Academics:

       2023 AAAI Conference Attendance

       2023 UMaine Student Symposium (UMSS) Poster Presentation

       CVPR 2024 Review as a Sekeh Lab member

       AISTAT 2023 Review as a Sekeh Lab member

Volunteering Activities:

       Deep Learning Summer Bootcamp 2023 Tutor

       Guest Lecturer at Machine Learning course Spring 2024

Licenses:

       IEEE Machine Learning Certificate

       ILI Certificate (English Language institute)

       Driving License

Languages:

       English, Persian, Spanish(Basic)

       TOEFL: 106 (Reading: 30- Listening: 27- Speaking: 23- Writing: 26)

       GRE: 310 3.5

Projects, Web sites and Applications:

       Transfer subgraph learning via transformers with source structure attention (Ongoing)

       Robust Subgraph Learning by Monitoring Early Training Representations[3]

       Optimal Transport-Based Graph Summarization via Information Theoretic Measures[1]

       Autonomous Vehicle Driving in Adverse Weather[2]

       Tree Shades Removal from Satellite Images

       Persian Websites Classification based on their content using CNN (IAI in IUT)

       Brain Segmentation for MS Diagnosis

Other activities:

       Playing piano (high level)

       Swimming (advanced)

       International Dance Festival 2022 (UMaine)

       International Dance Festival 2024 (UMaine)

PUBLICATIONS:

[1] S. Neshatfar, A. Magner and S. Y. Sekeh, "Promise and Limitations of Supervised Optimal Transport-Based Graph Summarization via Information Theoretic Measures," in *IEEE Access*, vol. 11, pp. 87533-87542, 2023

[2] Gharatappeh, Soheil, Sepideh Neshatfar, Salimeh Yasaei Sekeh, and Vikas Dhiman. "FogGuard: guarding YOLO against fog using perceptual loss." *arXiv preprint arXiv:2403.08939* (2024).

[3] Neshatfar, Sepideh and Salimeh Yasaei Sekeh. "Robust Subgraph Learning by Monitoring Early Training Representations." (2024).