Reza Namazi

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Education

Sharif University of Technology - Kish International Campus — Kish, Iran
B.Sc. in Computer Engineering, GPA: 17.78/20 (3.83/4.0) — 2017–2022

Selected Courses

- Artificial Intelligence — 19.8/20
- Complex Dynamic Networks (M.Sc. Course) — 17.5/20
- Engineering Probability and Statistics — 17.7/20
- Advanced Programming — 19/20
- Numerical Computations — 19.3/20
- Computer Simulation — 19.2/20

Research Interests

- **Graph Representation Learning**
- **Natural Language Processing**
- **Data Mining**
- **Reinforcement Learning**

Awards and Honors

- Ranked within the top 5% among B.Sc. Computer Engineering students
- Distinguished student in Computer Engineering Department

Research Experience

- Research Assistant, McMaster University, Hamilton, ON, Canada — 2021-present
  Remotely working as research assistant in Dr. Hamidreza Mahyar's lab on scalable and distributed graph representation learning using graph neural networks
- Multi-grid Project, Sharif University of Technology, Kish International Campus — 2020
  Using traditional methods, it is computationally expensive to solve large sparse linear systems of equations. To address this issue, multi-grid methods are employed. We did research on applying graph representation learning methods to multi-grid solvers.

Publications and Pre-prints

[1] **R. Namazi**, E. Ghalebi, S. Williamson, and H. Mahyar, *Smgrl: A scalable multi-resolution graph representation learning framework*, Code: https://github.com/rezanmz/SMGRL, 2022. arXiv: 2201.12670.

[2] **R. Namazi**, A. Zolanvari, M. Sani, and S. A. A. G. Ghahramani, *Gl-coarsener: A graph representation learning framework to construct coarse grid hierarchy for amg solvers*,
Code: https://github.com/rezanmz/GL-Coarsener, 2020. arXiv: 2011.09994.

Projects

- Graph Neural Network Architecture Search
  Neural Architecture Search (NAS) for Graph Neural Networks in a novel way. To speed up the process, first search on a low-resolution view of the training graph, then iteratively improve the quality of the network on higher "zoomed-in" version of the same graph. The search is done using Optuna.
  Code available at https://github.com/rezanmz/GNN-NAS
- Graph Visualization
  Given a list of nodes and edges, it is possible to visualize the graph in a 2-dimensional plane in an unlimited number of ways. In this project, I tried to find the "best" representation (aesthetically pleasing) of the given graph using force-directed layout algorithm.
- Modeling Epidemics
  In this project I tried to analyze an epidemic with infection rate and recovery rate in an SIS (Susceptible - Infected - Susceptible) model. Graphing the number of infected and susceptible nodes of the population in different steps of the epidemic reveals the epidemic threshold of the epidemic and much more!
- A naive implementation of a two-grid multigrid algorithm
  Solve very large sparse linear systems using a Python and C++ implementation of the multigrid algorithm.
  Python code available at https://github.com/rezanmz/AMG
  C++ code available at https://github.com/rezanmz/multigrid

Teaching Experience

- **Teaching Assistant** at Sharif University of Technology, Kish International Campus — March 2020
  Numerical Methods (50072)
- **Teaching Assistant** at Sharif University of Technology, Kish International Campus — October 2019
  Engineering Probability and Statistics (50063)
- **Teaching Assistant** at Sharif University of Technology, Kish International Campus — March 2019
  Basics of Programming (52153)

Test Scores

- **TOEFL iBT:** *Reading:* 30/30 *Listening:* 26/30 *Speaking:* 22/30 *Writing:* 24/30 ***Total: 102/120***

Skills

- **Programming Languages:** Python, C++
- **Machine Learning Frameworks:** Tensorflow, Keras, PyTorch
- **Others:** git, Linux, Docker, LaTeX

Languages

- **Persian:** Native
- **English:** Professional Proficiency

References

- **Dr. H. Mahyar:** Assistant Professor - W Booth School of Engineering Practice and Technology at the *McMaster University, Hamilton, ON, Canada*, Email: mahyarh@mcmaster.ca
- **Dr. S. Williamson:** Assistant Professor of Statistics at the *University of Texas at Austin, TX, United States*, Email: sinead@austin.utexas.edu
- **Dr. S.A.A. G.Ghahramani:** Assistant Professor - Computer Engineering Dept. at the *Sharif University of Technology, Kish International Campus*, Email: ghahramani@ce.sharif.edu
- **Dr. M. Sani:** Assistant Professor - Mechanical Engineering Dept. at the *Sharif University of Technology, Kish International Campus*, Email: msani@sharif.edu