# 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
  *The goal of this project is to speed-up the hyper-parameter tuning process of graph neural networks in very large search space. To speed up the process, initially, we 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*
- Molecule generation using Graph Convolutional Network (GCN)
  *Using GCN in a GAN-like setting, I trained a generative model that outputs the structure of molecules similar to the seen training data.*
  *Code available at https://github.com/rezanmz/MolGenerator*
- 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