Amirabbas Kazeminia

407 Memorial Drive, Cambridge, MA 02139 ● amirka@mit.edu ● +1 617-401-5428

EDUCATION

Massachusetts Institute of Technology (MIT) **Cambridge, MA**

Candidate for Bachelor of Science in Computer Science and Mathematics (**GPA**:4.8/5.0) *Expected to Graduate in 2024*

*Coursework***:** Algorithm, Linear Algebra, Machine Learning, Natural language processing, Deep learning, Probability and Random Variables, Fundamental of Statistics, Computation Structure, Software Construction, Biochemistry, Organic chemistry, Inorganic Chemistry, Physical Chemistry, Quantum Chemistry

SKILLS

Programming and Software: Python (Panda, Pytorch, HuggingFace, Scikit learn, JAX, DGL), C, Slurm Language, Linux commands, Assembly Language, TypeScript/JavaScript

Laboratory Skill: Characterizing molecules (H-NMR, C-NMR, HPLC, MASS-Spectroscopy), Protein expression and purification

EXPERIENCE

MIT Electrical Engineering & Computer Science Department **Cambridge, MA**

Project Leader (Final project for Natural Language Processing) *Sep 2022 – December 2022*

- Pre-trained a graph encoder on parse tree from Stanford Natural Language Inference dataset, using Graph Attention Network and Masked Graph Modelling
- Developed a new model with combining the pre-trained graph encoder for parse tree and BERT model for sentence embedding for the downstream task, inference relation classification

MIT Media Lab, Molecular Machine Lab **Cambridge, MA**

Undergraduate Researcher *June 2022 – December 2022*

- Developed a program that predicts the protospacer adjacent motif (PAM), a required DNA sequence for Cas9 to bind and edit genes, via Python, sequence alignment, data analysis, and machine learning
- Discovered 10,000 Cas9 protein sequence and predicted their associated PAM sequences from 700,000 bacterial genomes, using available databases, running multiple integrated automation pipelines on computer clusters, using shell scripting and multicore programming

MIT Electrical Engineering & Computer Science Department **Cambridge, MA**

Project Leader (Open-ended design project for computation structure class) *Feb 2022 – May 2022*

- Designed and optimized a RISC-V CPU, including Cache, ALU, and registers
- Programmed and optimized a quicksort algorithm in C assembly language

MIT Biology Department, Barbara Imperiali Lab **Cambridge, MA**

Undergraduate Researcher *Sep 2021 – Feb 2022*

• Modeled and investigated the inhibitor interaction in a membrane protein from Campylobacter, a pathogen in contaminated food or water, via molecular simulation

• Designed more efficient and more specific antibiotics for Campylobacter, using structure activity relationship

LEADERSHIP / EXTRACURRICULARS

Gordon-MIT Engineering Leadership Program **Cambridge, MA**

Gordon Engineering Leader *Sep 2022 – December 2022*

- Participating in selective leader development program focused on being an effective member or leader of industry engineering teams
- Actively practicing leadership, teamwork, and communication skills in an engineering context; complementing MIT's technical coursework

MIT Men's Lightweight Crew (NCAA div1) **Cambridge, MA**

Varsity Rower (MV8+, MV4+) *Sep 2020 - Present*

- Competed on the international, national, state, and local levels. Mentored recruits.

Young Scholar Club (Select and train top four high school students in the country for International Olympiads) **Tehran, Iran**

Consultant and Teacher *2018 - 2020*

- Advised students about time management, study skills, and course resources in order to establish academic success

International Biology Olympiad **Tehran, Iran**

Lab Assistant *June 2018*

- Selected to design, budget, and coordinate one of the experimental tasks for 300 international students
- Supervised a group of 10 lab assistants to provide the materials for 300 students

AWARDS

Gold Medal of International Chemistry Olympiad **Thailand**

3rd place in both Theoretical and Experimental Tasks, 2nd Highest score of Theoretical Task *June 2017*