Tamjeed Azad

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Education

- **Columbia University, B.S. (Anticipated)** — New York, NY
  Major in Computer Science, Minor in Economics. *August 2018 - May 2022*
  - Cumulative GPA: 3.97/4.00. Dean's List All Eligible Semesters. CP Davis Scholar, CU Scholars Program.
  - Selected CS Coursework: Computational Linear Algebra, CS Theory, Intro to Prob & Stats, Advanced Programming in C/C++, Data Structures and Algorithms in Java, Discrete Mathematics.

Research & Work Experience

- **Research Assistant, Azizi Lab** — Columbia University
  Work on using ML methods and designing processing pipelines for single-cell genomic data. *February 2020 - Present*
  - Currently working on a GvHD project, analyzing single-cell patient data using methods such as phenograph clustering and tSNE. Extensive data analysis using libraries such as pandas, matplotlib, and numpy.
- **Summer Research Intern, Qin Lab** — University of Tennessee at Chattanooga
  Paid Internship through iCompBio REU 2020, an NSF-funded program. *May 2020 - July 2020*
  - Worked on a project designing deep learning based COVID-19 prediction models; details in "Selected Projects".
- **Research Assistant, Synthetic Biological Systems Lab** — Columbia University
  Assistant in research on engineering bacterial biosensors for cancer tumor detection. *October 2018 - Present*
  - Coauthor on research paper: "Multiplexed biosensors for precision bacteria tropism in vivo." Preprint available on BioRXiv, publication in progress.
  - Completed paid summer internship in the lab through CU's Summer Undergraduate Research Fellowship in 2019.
- **Research Assistant, Klug Lab** — University of Tennessee at Chattanooga
  Computational Bio and Evolutionary Ecology research during high school. *November 2016 - August 2018*
  - Used Wolfram Mathematica to computationally analyze mathematical models that model the evolution of parental care in nature. Writing of coauthored research paper in progress.

Leadership & Involvement

- **Media Chair, Club Zamana** — Columbia University
  Largest South Asian cultural club on campus; responsible for all club media. *2019-2020* School Year
  - Was Organizational Committee Member on E-Board during 2018-2019 School Year.
- **Organizational Committee Member, Columbia Science Review E-Board** — Columbia University
  Club that spreads science literacy and publishes a science-focused magazine. *2019* Spring Semester
- **Other Extracurriculars:** Indoor & Outdoor Intramural Soccer Participant, Past NY Road Runners Member.

Software Skills

- **Proficient:** Python, Java, C/C++, HTML/CSS, JavaScript | **Some Experience:** R, Ruby, MATLAB
  Notable Libraries & Frameworks: Keras/TensorFlow, Express.js/Node.js | **Tools:** Bash, Unix, GIT, npm

Selected Projects (all code available on GitHub)

- **ml-covid19** (*2020 Summer*) Completed for the 2020 REU mentioned in "Research & Work Experience". Created several LSTM-based neural net models written in Keras/TensorFlow for weekly novel COVID-19 cases prediction in specific states and the greater US. Analyzed effectiveness of using historical flu data and temperature data for prediction.
- **nasapic** (*2020 Spring*) Full-stack Express.js app that uses Pug.js to render static content and serves NASA's Astronomy Picture of the Day using NASA's APOD API. Deployed at https://tamjazad-nasapic.glitch.me.
- **PenaltyKicks** (*2019 Summer*) Command Line Interface based game completely written in Java. It simulates a penalty kick shootout common in world football/soccer tournaments. Standard single player v. computer.