School Address:
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Quilee Simeon
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EDUCATION:

Massachusetts Institute of Technology (MIT)

Cambridge, MA
Sept 2021 — present

Ph.D. Student (Year 1), Department of Brain and Cognitive Sciences (BCS), Interdisciplinary Program in Statistics and Neuroscience

Expected Degree Date: June 6, 2027

Cambridge, MA
Sept 2017 — June 2021

B.S. in Computation and Cognition, Minor in Statistics and Data Science, GPA: 4.9/5.0

Degree Date: June 6, 2021

Relevant Coursework: AI & ML, Statistics & Data Science, Statistical Learning, Discrete Math, Linear Algebra, ML-Based Therapeutic Design, Computer Vision, Neural Computation & Circuits, Computational Neuroscience, Developmental Biology, Molecular & Cellular Neuroscience.

RESEARCH EXPERIENCE:

BCS Lab Rotations

Cambridge, MA
Oct 2021 — Feb 2022

Graduate Researcher (Fiete & Yang Lab)

- Developed computational models of results from approach-avoidance tasks in non-human primates.
- Implemented spiking and rate based RNN models of cognitive behavioral tasks.
- Trained reinforcement learning models (using PyTorch and OpenAI Gym) to perform a cost-benefit tradeoff decision making task originally designed for non-human primates (NHPs).
- Compared the performance of these networks against the behavioral performance of NHPs.

MIT Undergraduate Research Opportunities (UROP), McGovern Institute for Brain Research

Cambridge, MA
June 2018 — Dec 2020

Undergraduate Researcher (Graybiel Lab)

- Implemented behavioral apparatuses for cognitive assays in mice. This involved the construction of Arduino electronics and fabrication of hybrid electrophysiological neural interfaces.
- Applied experimental systems neuroscience approaches to study a mouse model of Huntington's disease.
- Wrote image analysis code for analyzing neuron cytoarchitecture in histological sections of the striatum.
- Built semi-automated animal behavior analysis pipeline making use of advanced imaging and machine learning techniques. Software: DeepLabCut, Python, C++. Hardware: Arduino circuits, Raspberry Pis.
- Applied computer vision models involving DeepLabCut to analyze stereotyped and repetitive behaviors in animal models of SHANK-protein mediated Autism Spectrum Disorder (ASD).

WORK EXPERIENCE:

Triplet Therapeutics

Cambridge, MA
Jan 2021 — March 2021
July 2019 — Sept 2019

Bioinformatics & Software Development Intern

- Extended the machine learning model for antisense oligonucleotide (ASO) efficacy prediction built in previous role. Improved the automated pipeline for small molecule drug design built in previous role.
- Developed web and command line applications for guiding small-molecule drug design and development decisions. The web app also formatted sequences using internal, patented oligo-design templates.
- Deployed a deep neural network model to analyze and accurately predict the gene knockdown efficacy of siRNA and ASO molecules with the aim of discovering drug candidates for rare neurological disorders.

MIT International Science and Technology Initiatives (MISTI)

Cambridge, MA
Oct 2020 — Dec 2020

MIT-Brazil Remote ELO Intern, Project Assistant & Student Ambassador

- Worked on an Artificial Biomedical Imaging Project in collaboration with the Albert Einstein Education and Research Israeli Institute as a remote Experiential Learning Opportunity (ELO).
- Applied computer vision techniques to describe and predict the migration of leukemia cells and their cellular interactions with tissue micro-environments in response to chemotherapy.
- Facilitated more opportunities for MIT students interested in the intersection of the natural sciences and engineering to travel to Brazil for summer internships and research opportunities.

remote
Jul 2020 — Aug 2020

- Brainstormed innovative collaborations to make use of biotech in Brazil and Latin America to solve difficult problems in agriculture and medicine.

TEACHING EXPERIENCE:

Tutor and Lab Assistant

Cambridge, MA
Feb 2020 — May 2020

Fundamentals of Programming

- Participated in weekly meetings plan course content and code labs from scratch.
- Revised coursework on image processing, recursion, dynamic programming and data structures.
- Provided students with technical and conceptual help during virtual and in-person office-hours.

Introduction to Neural Computation

Cambridge, MA
Feb 2020 — May 2020

- Hosted weekend tutoring sessions to review topics like mathematics of neurons, neural nets, statistical inference, and data analysis in neuroscience.

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VOLUNTEERING & D.E.I.:
IFC Diversity Committee
Celebration Subcommittee Co-Chair

remote
June 2020 — Sept 2020

- Set up and managed a blog on MIT's Intra-Fraternity Council (IFC) website for members of the IFC community to openly share their different member experiences with diversity and inclusion at MIT.

MIT Black Student Union (BSU)
Social Chair

Cambridge, MA
Sept 2018 — June 2019

- Collaborated to organize social events celebrating the black/African-American MIT community.
- Point-of-contact for guest speakers and performance groups at BSU social events.
- Maintained mailing lists and informed members of upcoming events.

SKILLS:
Computer: Programming (decreasing order of proficiency): Python, MATLAB, HTML, JavaScript, React, CSS, C, PHP, R, SQL; machine learning, bioinformatics, statistics, data analysis, spreadsheets
Language: French (spoken), German (beginner)
Professional: public speaking, leadership, project management

LEADERSHIP:
IEEE-HKN Beta Theta Chapter
Co-President

Cambridge, MA
present

Caribbean Science Foundation
SPISE 2020 Computer Programming Instructor

remote
June 2020 — Aug 2020

- Developed Caribbean students' understanding of concepts and fundamental principles in computer programming, so that they gain enough mastery to apply to solve problems requiring critical thinking.
- Acted as a mentor and role model for the students and provided guidance and advice on university and the possible challenges the may encounter in academic and professional life.
- Taught students the importance of teamwork, efficient study habits, and time-management skills.

Theta Chi Beta Chapter
Brotherhood Co-Chair

Boston, MA
Jan 2019 — Dec 2020

- Organized events and planned games aimed at strengthening social bonds within fraternity members.
- Fostered a familial atmosphere by planning educational and social activities.

Secretary (Executive Office)

Boston, MA
Dec 2018 — Dec 2019

- Maintained up-to-date records of meetings, member statuses and roles with national headquarters.
- Managed the day-to-day upkeep of the chapter house by managing house duty assignments.

MIT Global Teaching Labs (GTL)
Instructor - Wales

Cardiff, Wales
January 2020

- Designed and presented multidisciplinary courses reflective of the type of critical thinking and problem solving skills required of a lifelong learner:
    1. SSH and Data Processing : how to set up, gather and process experimental data remotely;
    2. Coding Complexity and Chaos : combining computer science, art and mathematics;
    3. Neurotechnology : seminar on technology at the intersection of computation and cognition.

Instructor - South Africa

Johannesburg, ZAF
January 2019

- Taught intro level courses in computer science, neuroscience and neurotechnology to high school students from across countries in southern Africa as part of an independently developed curriculum for the first ever GTL program on the African continent.

MIT CLUBS/ACTIVITIES:
Admissions Tour Guide, Caribbean Club, Black Student Union, Theta Chi Fraternity (Beta Chapter)

HONORS:
- Member of Beta Theta (MIT) Chapter of Eta Kappa Nu (National Honor Society)
- Oxford Rhodes Finalist for the Commonwealth Caribbean

SOCIETIES/ORGANIZATIONS: Caribbean Diaspora for Science Technology and Innovation — New England (CADSTI-NE), Eta Kappa Nu (IEEE-HKN), Theta Chi Fraternity