Sadie L. Allen

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EDUCATION

Boston University College of Engineering and College of Arts and Sciences   Boston, MA
Bachelor of Science in Computer Engineering   May 2021
Bachelor of Arts in Pure and Applied Mathematics*
Cumulative GPA: 3.92/4.00 (Dean's list, all semesters)
*Dual Degree Program
Boston University College of Engineering   Boston, MA
Ph.D. in Computer Engineering   Expected May 2026

RESEARCH INTERESTS

Symbolic music generation, algorithmic fairness, deep learning, statistics and mathematical modeling, intersections between biology/psychology and mathematics and engineering, linguistics.

RELEVANT EXPERIENCE

Danfoss Power Solutions; Danfoss Innovation Accelerator, Cambridge, MA   **June 2021 - December 2021**
Data Science Intern
- Developed models for data-driven sales opportunity analytics including a binary classification model to predict likelihood of closing a sale and a Cox PH model to estimate time-to-close
- Extended sales opportunity model suite with partial dependency plot-based feature importance to recommend specific actions for sales managers

IBM; TJ Watson Research Center, Yorktown Heights, NY   **Summer 2020**
Research Intern
- Designed a UI in JavaScript using libraries including D3, Vega, and VegaLite
- Conducted extensive literature survey and fault injection experiments on benchmark applications to gain familiarity with Kubernetes and fault diagnosis in distributed systems

Boston University; PEACLab, Boston, MA   **Spring 2019 – Spring 2021**
Undergraduate Researcher
- Worked on Praxi, a tool designed to aid cloud administrators to monitor software present on their systems; Praxi employs a machine learning model to identify applications based on file system changes
- Converted research code to industry-ready modules, primarily coding in Python on Linux virtual machines (VMs)
- Designed hands-on cloud security software tutorial and extended Praxi's capabilities to version detection

Boston University; Gardner Lab, Boston, MA   **Summer 2018**
Programming Assistant
- Organized and documented a data analysis pipeline used to analyze audio and electrophysiology data from zebra finches; migrated pipeline to Github
- Merged, updated, and debugged MATLAB applications used in data processing

The Jackson Laboratory, Bar Harbor, ME   **Summer 2017**
Research Intern
- Drafted NIH research proposal
- Performed statistical analyses in R on a large data set containing phenotypic and genotypic information on 378 mice
- Completed research paper detailing findings and presented findings in formal research symposium
- Worked as teaching assistant in R, QTL, and QTL2 workshops for Jackson Lab researchers

OTHER EXPERIENCE

Boston University Department of Electrical and Computer Engineering, Boston MA **August 2019 – Present**
Undergraduate Teaching Assistant for EC330 Applied Algorithms, EC414 Introduction to Machine Learning;
Graduate Teaching Assistant for EC440 Operating Systems

Boston University Education Resource Center, Boston, MA **Fall 2018 – Spring 2019**
Tutor (Multivariate Calculus, Differential Equations, Physics I & II)

PROJECTS

- **Spotimy:** website enabling users to filter their playlist according to audio features from the Spotify API
- **ContextCheck:** website with BERT-based NLP algorithm fine-tuned to detect bias in news articles
- **Language Usage Correction Program:** with web crawler and language checking algorithm that assesses the grammar of input sentences
- **Modulo Intelligent and Modular Inventory System:** [personal project] that updates content in real-time online at low cost; uses embedded electronics, is easily upgradeable, and can automatically order supplies

HONORS & AWARDS

- Boston University Claire Boothe Luce Fellowship (2-year Ph.D. fellowship) **Fall 2021**
- Michael F. Ruane Award for Excellence in Senior Capstone Design **Spring 2021**
- Senior Design Project Excellence Award **Spring 2021**
- Undergraduate Research Opportunity Program Award **Spring 2019, Fall 2019, Spring 2020, Fall 2020**
- Honorable Mention for the Computing Research Association's (CRA) Outstanding Undergraduate Researcher Award **Spring 2020**
- Best in Class for Sophomores in Boston University's Imagineering Competition **Spring 2019**
- Boston University Richard D. Cohen Scholarship **Fall 2017 – Spring 2018**
  - Academic scholarship for full tuition
- Boston University's Lutchen Engineering Summer Fellowship **Spring 2017**

CO-CURRICULARS

Tau Beta Pi Engineering Honor Society Eta Chapter **Fall 2019 – Spring 2021**
- **Vice President**, Summer 2020 – Spring 2021

Chordially Yours – A Cappella Group at Boston University **Spring 2018 – Spring 2021**
- **Music Director**, Summer 2020 – Spring 2021

PUBLICATIONS AND TALKS

- **Sadie L. Allen**, Mert Toslali, Srinivasan Parthasarathy, Fabio Oliveira, Ayse K. Coskun. Tritium: A Cross-layer Analytics System for Enhancing Microservice Rollouts in the Cloud.
- **Sadie L. Allen**, Anthony Byrne, and Ayse K.Coskun. 2020. Poster Abstract: Version Detection for Software Discovery in the Cloud. *Middleware '20: International Middleware Conference*, December 7–11, 2020, Delft, The Netherlands. ACM, New York, NY, USA, 2 pages.
- Anthony Byrne, **Sadie L. Allen**, Shripad Nadgowda, and Ayse K.Coskun. 2019. Demo Abstract: Praxi: Cloud Software Discovery That Learns from Practice. *Middleware '19: International Middleware Conference*, December 8–13, 2019, Davis, CA, USA. ACM, New York, NY, USA, 2 pages.
- Keller et. al. "Genetic Drivers of Pancreatic Islet Function", *Genetics,* September 2018.

SKILLS

Computer: C, C++, Java, JavaScript, ReactJS, D3, Vega, Python, R, ROS, GitHub, MATLAB, Linux, RISC-V, Verilog

OTHER INTERESTS

Running, ice skating, hiking, singing, music production, board games, Latin.