# Ananya Swaminathan

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## EDUCATION

**Johns Hopkins University** — Baltimore, MD
Bachelor of Science, Biomedical Engineering | Focus area: Biomedical Data Science (GPA: 3.73) — Expected May 2021
Minor: Computational Medicine

**Relevant Courses:** Data Structures, Neuroengineering Lab, Biomedical Data Science
**Honors and Awards:** Dean's List (Fall 2017, Spring 2018, Fall 2018, Spring 2019, Fall 2019)

## SKILLS

- Hard skills: Python, MATLAB, Java, PTC Creo, SolidWorks, Microsoft Office
- Soft skills: Scientific presentation, public speaking

## ENGINEERING AND RESEARCH EXPERIENCE

**Johns Hopkins University, Precision Care Medicine** — Baltimore, MD
Team Member | Cool Monkey — September 2019 - Present

- Developing novel machine learning based system to predict onset of hypoxemia in ICU patients
- Extracted and generated features of interest from MIMIC III Clinical Database
- Validated methodology and results through plotting and analyzing feature trends
- Presented progress to the rest of the class at the end of both semesters

**Johns Hopkins University, Cullen Lab** — Baltimore, MD
Research Assistant — June 2018 - Present

- Creating custom code to identify instances of circling in output x, y positions
- Validated mice models of Usher syndrome by using DeepLabCut, a Python package
- Developed camera system for real-time detection and analysis of monkey eye movement
- Used OpenCV to adjust recording parameters and extract pupil location in each frame

**Johns Hopkins University, Neuro Data Design (Vogelstein Lab)** — Baltimore, MD
Team Member | mgcpy — September 2018 - May 2019

- Implemented methods of 2-sample testing in Python
- Generated power curves in order to validate these methods
- Presented progress to the rest of the class on a weekly basis

Team Member | LIDS — February 2018 - May 2018

- Implemented linear discriminant analysis (LDA) in Python to detect cells in brain slices
- Evaluated the performance through quantitative and qualitative measures

## PRESENTATIONS

- **Swaminathan, A.**, Wojahn, E., Chang, H. H., Zobeiri, O., and Cullen, K. E. Quantifying circling behavior and head bobbing in mice with CIB2 mutations. Poster session at the annual conference of the Biomedical Engineering Society; 2019 Oct 16-19; Philadelpha, PA.

## TEACHING EXPERIENCE

**Johns Hopkins University, Department of Neuroscience** — Baltimore, MD
Teaching Assistant | Cognitive Neuroscience — January 2020 - May 2020

- Led practice and review sessions for quizzes and exams
- Provided feedback for final projects
- Answered questions on Piazza, an online Q&A forum

## LEADERSHIP AND VOLUNTEER EXPERIENCE

**Johns Hopkins University, Department of Biomedical Engineering** — Baltimore, MD
Lab Manager | Structural Biology of the Cell — September 2019 - December 2019

- Supported and guided group of ten freshmen as they completed labs
- Provided students with feedback on their work and mentorship in Biomedical Engineering

**Charm City Science League** — Baltimore, MD
Head Mentor (Completed 80 hours) — October 2017 - Present

- Mentored middle schoolers for Science Olympiad events
- Developed curriculum for mentors to use while teaching students
- Wrote exams and proctored events for Baltimore Regional Tournament and Maryland State Tournament (focus events: Heredity, Anatomy, Protein Modeling)