Ananya Swaminathan

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EDUCATION

Johns Hopkins University　　　　　　　　　　　　　　　　　　　Baltimore, MD
Master of Science in Engineering, Biomedical Engineering | Focus area: Neuroengineering　　Expected Dec 2021
Bachelor of Science, Biomedical Engineering | Focus area: Biomedical Data Science (GPA: 3.77)　　May 2021
Minor: Computational Medicine

SKILLS

- Programming: Python, MATLAB, R/Shiny, Java, OpenCV, PyTorch, TensorFlow
- Computer-Aided Design: SolidWorks, Fusion 360, PTC Creo

WORK EXPERIENCE

National Institute of Mental Health　　　　　　　　　　　　　　Bethesda, MD
Summer Intern　　　　　　　　　　　　　　　　　　　　　　　Jun 2021 - Present
- Analyzing hormonal biomarkers of circadian rhythm disruption in bipolar disorder, depression, and migraine

Johns Hopkins University, Cullen Lab (Systems and Behavioral Neuroscience)　　　Baltimore, MD
Research Assistant (including summers)　　　　　　　　　　　　　Jun 2018 - Present
- Using computer vision to create tool that can screen mice for vestibular dysfunction
- Developed camera system for real-time detection and analysis of monkey eye movement

Johns Hopkins University　　　　　　　　　　　　　　　　　　Baltimore, MD
Teaching Assistant　　　　　　　　　　　　　　　　　　　　　Jan 2020 - Dec 2020
- Guided high schoolers and college freshmen and sophomores through course material
- Held weekly sections and office hours to present supplementary material and take questions
- Taught Cognitive Neuroscience, Engineering and Innovation, and Biochemistry and Molecular Engineering

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ENGINEERING EXPERIENCE

Johns Hopkins Center for Bioengineering Innovation and Design　　　　Baltimore, MD
Design Team Member | DT9　　　　　　　　　　　　　　　　　Apr 2020 - Present
- Creating device or procedure to increase ease and efficiency of COVID-19 saliva testing
- Designing parts for prototypes using CAD software
- Writing protocols to test whether prototypes meet user requirements

Johns Hopkins University, Precision Care Medicine　　　　　　　　Baltimore, MD
Team Member | Cool Monkey　　　　　　　　　　　　　　　　　Sep 2019 - Nov 2020
- Developed novel machine learning based system to predict onset of hypoxemia in ICU patients
- Validated methodology and results through plotting and analyzing feature trends

Johns Hopkins University, Neuro Data Design (Vogelstein Lab)　　　　Baltimore, MD
Team Member | mgcpy　　　　　　　　　　　　　　　　　　　Sep 2018 - May 2019
- Implemented methods of 2-sample testing in Python
- Generated power curves in order to validate these methods

Team Member | LIDS　　　　　　　　　　　　　　　　　　　　Feb 2018 - May 2018
- Implemented linear discriminant analysis (LDA) in Python to detect cells in brain slices
- Evaluated the performance through quantitative and qualitative measures

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LEADERSHIP AND VOLUNTEER EXPERIENCE

Johns Hopkins University, Department of Biomedical Engineering　　　Baltimore, MD
Lab Manager | Structural Biology of the Cell　　　　　　　　　　　Sep 2019 - Dec 2019
- Guided and supported 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
Mentor (Completed 100 hours of service)　　　　　　　　　　　Oct 2017 - May 2021
- Prepared middle schoolers for Science Olympiad tournaments
- Developed curriculum for mentors to use while teaching students