

Shardul Rakshit

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EDUCATION

Johns Hopkins University

Majors: Biomedical Engineering Minors: Computer Science

Cumulative GPA: 3.85

Relevant Coursework: Systems Biology of the Cell, Machine Learning, Biomedical Data Science, Data Structures, Computational Medicine: Cardiology, Genomic Data Science, Systems Pharmacology and Personalized Medicine

Baltimore, MD

2018-2022

TECHNICAL SKILLS

Programming: Java, MATLAB, C, C++, Python, MongoDB, MySQL, HTML/CSS/Javascript, Node.js, React.js

Software: Solidworks, Autocad

Memberships: National Eagle Scout Association (September 2017-present), Biomedical Engineering Society (BMEs)

WORK EXPERIENCE AND INTERNSHIPS

Software Engineer - Longevity InTime BioTech

June 2022 - Present

- Working as a full-stack engineer to optimize web features and AI models for early-stage prediction of severe health risks using Python/Django and PostgreSQL

Data Scientist - JHU Department of Computer Science

May 2020 - May 2022

- Developed and designed real-scale model for COVID-19 disease spread in varying communities based on infection rate and geolocation data on machine learning sub team
- Implemented probabilistic graphical model-based approaches, spatiotemporal clustering methods, and deep learning algorithms to cluster geolocation data into convenience zones and determine hotspots of disease spread
- Used python and javascript to visualize results of synthetic population model for web app (covidweb.isi.jhu.edu)

Machine Learning Analyst - NIH, NIA, Laboratory of Cardiovascular Science

June 2019 - August 2021

- Developed a computational algorithm using MATLAB imaging to analyze cluster distributions and aging patterns of Ryanodine Receptors in the cardiac pacemaker cells of young and old mice
- Summer Poster Presenter, NIH main campus: Cluster Distributions of Ryanodine Receptors in Cardiac Pacemaker Cells revealed by Super-Resolution Microscopy and 3D Computational Geometry Algorithms
- Updated common pool model of cardiac pacemaker cells to factor in more sensitive ion channels and currents during summers of 2020 and 2021

Undergraduate Research Fellow - JHU BioMEMS & Single Molecule Dynamics Lab

Fall 2019 - May 2020

- Developed and designed point-of-care magnetofluidic cartridges for HIV viral RNA quantification with an optimized PCR and Arduino microcontrollers to create a portable device capable of accurately diagnosing HIV in less than an hour from patient blood samples
- Used magnetic beads and RT-qPCR to detect nucleic acids for HIV diagnosis in a wet lab environment
- Optimized experimental tests to increase assay sensitivity and specificity

VOLUNTEERING

Johns Hopkins Hospital

Child Life Volunteer

Baltimore, MD

Fall 2019 - Present

- Provide emotional comfort and assist children of varying ages before surgery

JHU Musicare

Singing Volunteer

Baltimore, MD

Fall 2019 - Present

- Sing songs for patients at local hospitals (Mercy, Kennedy Krieger Institute, and Keswick Multi-Care Center)

JHU Heart and Stroke Awareness (HASA)

Health Fair Coordinator

Baltimore, MD

Fall 2019 - Present

- Coordinated with American Heart Association and fundraised for the Greater Maryland Heart Walk

Yo! Baltimore Tutoring Project

Secretary

Baltimore, MD

Fall 2019 - Present

- Tutor adults preparing for their GEDs of all ages in reading and math in the Baltimore area

PROJECTS

C4 Tetraplegia Wheelchair Modification

- Developed and engineered wheelchair modification attachment with a team of 10 undergraduates for a C4-5 quadriplegic power wheelchair user paralyzed below the shoulders so that he could play with his newborn child without physically injuring him

Greenhouse Gas Emissions Tracker

- Developed shiny web app in R that uses ML regression techniques on CO2 emissions data to predict future global environmental trends in climate change