MYSON BURCH

P 317-797-5663

E mcburch@purdue.edu

A 610 Purdue Mall, West Lafayette, IN

W web.ics.purdue.edu/~mcburch

EXPERIENCE

May 2022 – August 2022
Computational Genomics Intern – IBM Research
Address high dimensional genomics-related questions through mathematical modeling, statistical methodologies, combinatorics and scalable algorithms.

May 2021 – August 2021
Data Science Intern – Cummins IT Analytics and AI
Contribute to the company's ability to perform real time condition monitoring, enable process improvement, and maintain machine health using deep learning, big data analytics, computer vision and NLP methods.

Design strategic tools, prototypes, and software to mitigate costs of reactive repairs, repetitive inspections, and unscheduled issues in manufacturing and product development using a proactive monitoring system. Implement solutions and communicate feedback to key stakeholders during regulatory meetings.

August 2017 – Present
Research Fellow & Teaching Assistant – Purdue University
Develop innovative techniques at the intersection of technology and life sciences using biobank scale data from GWAS studies and machine learning as an effort to better understand human health and disease.

Collaborate with an interdisciplinary lab to engineer technical solutions and analysis for complex quantitative genomics problems involving large datasets that contribute to precision medicine and advance the healthcare industry

Teach 400+ undergraduates and aid in developing their programming, statistics, and analytical skills. Demonstrated written, communication and conflict resolution skills as a teacher. Work collaboratively with other RAs.

PUBLICATIONS

- *CluStrat: a structure informed clustering strategy for population stratification*, RECOMB (2020) & Bioinformatics (*under review*, 2022).
- *Polygenic risk scores based on European GWAS correlate to disease prevalence differences around the world*, *under review*, 2022.
- *Mentoring Black Teens During National Pandemics: Mutually Beneficial Service*, PJSL and International Engagement, 2021.
- *Assessing the hemodynamic contribution of capillaries, arterioles, and collateral arteries to vascular adaptations in arterial insufficiency*. Microcirculation, 2020.

LEADERSHIP

Purdue SROP & Bridge, Graduate Coordinator
Purdue Black Graduate Student Association, Vice President

EDUCATION

Purdue University
PhD in Computer Science
August 2017 - Present

Indiana University-Purdue University of Indianapolis
B.S. in Computer Science
B.S. in Applied Mathematics
August 2013 – May 2017

INTERESTS

- DATA SCIENCE
- STATISTICAL GENETICS
- AI
- BIOINFORMATICS

COMPUTATIONAL SKILLS

- PYTHON, R, SAS
- JAVA
- C, C++
- JULIA, MATLAB
- SQL
- OFFICE, DATABRICKS, JUPYTER NOTEBOOK

GRANT WRITING

- NSF GRADUATE FELLOWSHIP
- FACEBOOK FELLOWSHIP
- BLOOMBERG FELLOWSHIP
- NIH PREDOC. FELLOWSHIP