

Samuel Mercier

<https://sam.mrcr.us> sam [at] mrcr [dot] us

Citizenship: United States Citizen Github: <https://github.com/samontea>

Education

Purdue University (College of Science, Honors College)

May 2020

B.S. in Mathematics with Departmental Honors. Minors: Computer Science, Philosophy

3.7/4.0

Bachelors Thesis: An Introduction to Homotopy Colimits

Awards & Honors:

- o E. V. Schenkman Award (Awarded to the best algebra student in the Dept. of Mathematics) *Spring 2020*
- o Outstanding Senior in Mathematics (Awarded to one senior in the Dept. of Mathematics) *Spring 2019*
- o Purdue Presidential Scholarship *2015–2020*
- o Purdue Marquis Scholarship *2015–2020*
- o Dean's List *2015–2020*
- o Senior Achievement Award (Math Dept.) *Spring 2020*
- o T. Arai Scholarship *Spring 2019*
- o M. Daniels Early Graduate Scholarship *Fall 2015*

Experience

Work Experience – Software Engineering

Software Engineer 2 MongoDB (New York) – Query Team *August 2020 (Expected)*

Software Engineer Intern NASA JPL (Pasadena, CA) – Modeling & Verification *May 2020–Present*

Developing “Next-Generation Modeling and Simulation Software” in Java in support of JPL engineering missions (e.g. Europa Clipper).

Software Engineer Intern Affirm (San Francisco, CA) – Risk Engineering Team *Sept. 2019–Nov. 2019*

Expanded the functionality of the underwriting microservice. Made loan decision tasks asynchronous. Expanded integration testing of loan decisioning. *Technologies:* Python, SQL, & Docker.

Software Engineer Intern MongoDB (New York) – Query Team *May 2018–Aug. 2018 & May 2019–Aug. 2019*

Implemented a new index type which can index all fields of all documents in a given collection. Sped up \$lookup queries by 28x according to performance tests. Recovered technical debt by rearchitecting projection execution. *Technologies:* C++, Python (for testing), & JavaScript (for testing).

Software Engineer Intern MongoDB (New York) – Monitoring Team *May 2017–Aug. 2017*

Researched and implemented time series analysis techniques for anomaly detection for their “DaaS” platform. Created automated anomaly detection alerts. *Technologies:* Java & MongoDB.

Web Dev. Intern for NASA Systems Engineering NASA JSC (Houston, TX) *Jan. 2017–May 2017*

Developed requirement management software used throughout NASA. Added routing. Isolated state.

Software Engineer Intern (Fullstack) Springbuk (Indianapolis, IN) *June 2016–Aug. 2016*

Led development on a client onboarding application.

Work Experience – Teaching

Undergraduate Teaching Assistant Purdue University *2015–2020*

Prepared course materials (labs, homework, exams, etc.) and taught the following courses:

- o CS 240 (Programming in C) *Spring 2020*
- o CS 252 (Systems Programming) *Spring 2019*
- o MA 162 (Analytic Geom. and Calculus II) *Spring 2019*
- o CS 252 (Systems Programming) *Fall 2018*
- o MA 161 (Analytic Geom. and Calculus I) *Fall 2018*
- o CS 252 (Systems Programming) *Spring 2018*
- o CS 240 (Programming in C) *Fall 2016*
- o CS 240 (Programming in C) *Spring 2015*

Computer Science Help Room Tutor Purdue University

Sept. 2015–Dec. 2015

Ran a help room for CS 180 (Object Oriented Programming) & CS 240 (Programming in C).

Volunteer Experience

BoilerMake Hackathon Executive Board (Dev & User Experience Team)

January 2016–October 2018

Purdue FIRST Programs (IT Team)

August 2015–December 2016

IT Director

May 2016–December 2016

Lead IT work for organization that helps support local robotics teams in high schools and middle schools.