Samuel A. Mercier

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Education

Purdue University (College of Science, Honors College) **West Lafayette, IN**
B.S. in Mathematics, B.S. in Computer Science Minor: Philosophy *May 2020*

Relevant Course Work CS 381 *Intro to Algorithm Analysis*, CS 252 *Systems Programming*, MA 572 *Algebraic Topology*, MA 553 *Algebra*

Awards: Purdue Presidential Scholarship & Purdue Marquis Scholarship *Fall 2015–Present*

Thomas Arai Scholarship *Spring 2019*

Mitch Daniels Early Graduate Scholarship *Fall 2015*

Honors: Dean's List *6 of 7 semesters*

The Outstanding Senior Mathematics Major *Spring 2019*

Experience

Work Experience – Software Engineering

Programming Languages/Frameworks

- Proficient: C/C++ & JavaScript
- Familiar: Elixir, Emacs Lisp, Java, Python, & Ruby

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

I will be developing the query subsystem of the NoSQL database in C/C++.

Software Engineer Intern NASA JPL (Pasadena) – Modeling & Verification *May 2020–July 2020 (Expected)*

I will be working on a project called "Next-Generation Modeling and Simulation Software" in Java this summer. This project supports the Mars 2020 and Europa missions.

Software Engineer Intern Affirm (San Francisco) – Risk Engineering Team *September 2019–November 2019*

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

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

Implemented a new index type which can index all fields of all documents in a given collection. Sped up $lookup/join 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–August 2017*

Researched and implemented time series analysis techniques for anomaly detection for their "DaaS" platform. Integrated into existing alerts framework to create automated anomaly detection alerts.
Technologies: Java & MongoDB.

Web Development Intern in Support of NASA Systems Engineering NASA JSC *January 2017–May 2017*

Developed requirement management software used throughout NASA. Isolated state, and added routing.
Technologies: JavaScript, Node, Angular 1.x, Brunch, & Redux.

Software Engineer Intern Fullstack Springbuk (Indianapolis) *June 2016–August 2016*

Led development on an external onboarding application. Improved frontend/backend communication of product.
Technologies: PostgreSQL with ActiveRecord as a wrapper, Ruby, Ruby on Rails, & JQuery.

Work Experience – Teaching

MA 161/162 Undergraduate Teaching Assistant *August 2018–May 2019*

Answer questions with students in "flipped classroom" for MA 161/162 (*Calculus I/II*).

CS 252 Undergraduate Teaching Assistant *January 2018–May 2018 & August 2018–May 2019*

Assist in teaching CS 252 *Systems Programming* in weekly lab classes & preparing materials (labs, exams, etc.)

CS 240 Undergraduate Teaching Assistant *January 2016–May 2016 & August 2016–December 2016*

Assist in teaching CS 240 *Programming in C* in weekly lab classes & preparing materials (labs, exams, etc.)

CS USB Help Room Tutor *September 2015–December 2015*

Tutored in CS 180 *Object-Oriented Programming* & CS 240 *Programming in C*.

Volunteer Experience

BoilerMake Hackathon Executive Board (Dev & User Experience Team) *January 2016–October 2018*

Helped plan and organize anything relating to resources/services for the event participants. Made a puzzle webapp.

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.