Samuel Mercier

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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: Purdue Presidential Scholarship, Purdue Marquis Scholarship	*2015–2020*
Senior Achievement Award (Dept. of Mathematics)	*Spring 2020*
E. V. Schenkman Award (Awarded to the best algebra student in the Dept. of Mathematics)	*Spring 2020*
Thomas Arai Scholarship	*Spring 2019*
M. Daniels Early Graduate Scholarship	*Fall 2015*
Honors: Outstanding Senior in Mathematics (Awarded to one senior in Mathematics)	*Spring 2019*
Dean's List	*2015-2020*

Experience

Work Experience – Software Engineering

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.