Samuel Mercier

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Citizenship: Ireland, United States (Dual 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.

Bachelors Thesis: An Introduction to Homotopy Colimits *Advisors: Jeremy K. Miller, Paul VanKoughnett*

Awards & Honors:

- E. V. Schenkman Award (Awarded to the best algebra student in the Dept. of Mathematics) *Spring 2020*
- Outstanding Senior in Mathematics (Awarded to one senior in the Dept. of Mathematics) *Spring 2019*
- Merit scholarships covering 97.5% of tuition: *2015–2020*
  Presidential Scholarship (University), Marquis Scholarship (University), T. Arai Scholarship (Math Dept.), M. Daniels Early Graduation Scholarship (Indiana Gov.)
- Dean's List *2015–2020*
- Senior Achievement Award (Math Dept.) *Spring 2020*

Experience

Work Experience – Software Engineering

Software Engineer 2 MongoDB (New York) – Query Team *Aug. 2020–Present*

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

Developed "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:

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

Purdue FIRST Programs (IT Team; IT Director) *Aug. 2015–Dec. 2016*

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