Sarah McClain

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Education

University of Puget Sound
Bachelor of Science, May 2020
Major: Computer Science   Minor: Mathematics
Graduated *Cum laude*, GPA: 3.73/4.0

Relevant Courses: Data Structures, Software Engineering, Principles of Database Systems, Algorithms and Data Structures, Operating Systems, Optimization, Assembly Language and Computer Architecture, Probability Theory and Linear Algebra

Languages: Java, PHP, C, SQL, HTML, CSS
Tools: Git, Visual Studio
Databases: SQLite

Research and Projects

Victim Advocate Communication Hub
University of Puget Sound   January 2020 – May 2020
- Constructed a "web portal" for secure communication streams between victims of sexual assault and victim advocates
- Designed a relational database solution in SQLite for securely storing account information of victim advocates
- Designed various front-end interfaces for victims and victim advocates and deployed on an Apache server
- Implemented SendBird API for secure (HIPPAA/PHI) messaging
- Engaged in a daily scrum log and biweekly scrum reports with our faculty advisor

Efficient Query Execution over Large Databases Through Semantic   May 2019 – March 2020
Caching of Bitmap Indices
University of Puget Sound Summer Research Scholar
- Worked individually, with the help of a faculty adviser, to design a semantic cache leveraged over a bitmap index to increase the efficiency of querying large database systems
- Designed and tested multiple algorithms in Java for minimizing time spent searching the cache
- Wrote and presented a poster detailing the results at the Summer Research Symposium held at the University of Puget Sound
- Submitted paper for publication to SSDBM 2020: International Conference on Scientific and Statistical Database Management in Vienna, Austria

Course Scheduler   October 2019 – December 2019
University of Puget Sound – Department of Hispanic Studies
- Designed a relational database solution for simplifying course scheduling for the chair of the Department of Hispanic Studies with two peers for our Database Systems class and deployed application on an Apache server
- Populated the SQLite database from a CSV file and designed a simple user interface
- Wrote an algorithm in PHP to generate schedules and designed a ranking system for optimizing schedules

Work Experience

Computer Science Grader/Tutor   September 2018 – Present
University of Puget Sound – Department of Mathematics and Computer Science
- Evaluated and debugged Java code on presence of style, compile-time and logical errors for 25 students in an Introduction to Computer Science class
- Held weekly tutoring hours for drop in help of students in the Introduction to Computer Science or Data Structures classes

Computer Science Educational Assistant   June 2019 – July 2019
Wisconsin Center for Academically Talented Youth (WCATY)
- Supervised and instructed 20 high performing high school students interested in programming Python at a pre-college program held at the University of Wisconsin – Madison
- Assisted instructor by teaching lessons, doing one-on-one tutoring and grading assignments

Activities and Certificates

Ultimate Frisbee, University of Puget Sound   August 2016 – May 2020
Dining Worker, University of Puget Sound   March 2018 – May 2020
Youth Mental Health First Aid Certified, National Council for Behavior Health   June 2019 – June 2022