Joanna Che

2435 Kingsway, Vancouver, BC
(+1) 778-892-4889 | jca241@sfu.ca | joannache

Education

M.Sc. Computing Science (Thesis Option) *Jan 2020 – Present*
Simon Fraser University (GPA: 4.05/4.33), *Advisor: Prof. Keval Vora* *Burnaby, BC*

B.Sc. Computing Science, SFU-Zhejiang University Dual Degree Program *2019*
Simon Fraser University (GPA: 3.66/4.33) *Burnaby, BC*

B.Eng. Computing Science, SFU-Zhejiang University Dual Degree Program *2019*
Zhejiang University (GPA: 3.44/4.00) *Hangzhou, China*

Work Experience

Parallel & Distributed Computing Lab (PDCL) - Research Assistant *May 2019 – Present*

- Researched graph mining and graph processing problems and developed multithreaded solutions in C++.
- Developed a state-of-the-art graph processing system that sped up execution by 100×.
- Designed an adaptive execution strategy that automatically optimizes the execution plan of DZiG, a sparsity-aware incremental graph processing system, via overhead Identification and a linear regression model that further sped up execution by 1.2×.
- Leveraged implicit and explicit dependencies in graph mining to accelerate performance by eliminating redundant work, promoting cache reuse, and reordering operations, to solve problems unaddressed by current state-of-the-art graph mining systems.
- Profiled code with Intel VTune, gperftools, perf and other profilers to reduce overheads and improve execution time.
- Used Bash and Python scripts to automate experiments and parsing of logs for easier log analysis and comparisons.

Teaching Assistant - CMPT431/CMPT770 Parallel and Distributed Computing *Fall {2020, 2021, 2022}, Spring 2023*

- Introduced students to various C++ tools such as GDB, Valgrind, Thread/Address Sanitizer to help debug their code.
- Hosted weekly office hours to answer student questions about the course and assignments and marked student assignments.

Visier - Full Stack Software Developer Coop *May 2018 – Dec 2018*

- Worked on a web application that used Angular 4, Scala, Java, Cassandra and PostGreSQL databases, and Apache Kafka.
- Managed end-to-end workflows for new features that required meetings with different teams to discuss specifications and scope.
- Developed front-end components, data transfer objects, server endpoints, database operations, and unit tests for new features.

Microsemi Corporation - Applications Engineer Coop (Java Developer) *May 2017 – April 2018*

- Worked on a multi-threaded Java desktop application that provided functionality for configuration and troubleshooting.
- Implemented new features that improved user workflows by automating log collection and parsing collected logs into a user-friendly gui, allowing team members to easily reproduce issues faced by customers.

Projects and Activities

Comfy Pomodoro (CMD-F 2022 Hackathon: Best use of Google Cloud Prize) *March 2022*

- Leveraged MERN stack to create a webapp deployed to Google Cloud, that provides users a way to use the pomodoro technique.
- Integrated MongoDB to support "message in a bottle" feature, storing messages which are randomly exchanged with other users.

Robotics Workshop Leader - Try/Catch (Computing and Technology Conference for Her) *May 2019, May 2017*

- Created a workshop for high school students using TurtleBots, a small robot that uses Robot Operation System (ROS).
- Conducted a high school robotics workshop, instructing students on building and controlling robots using VEX Robotics.

Deep-Learning for Bird Identification *Jan 2018 – April 2018*

- Designed and built an Android application to identify over 200 bird species using a neural network with 70-95% accuracy.
- Used TensorFlow to train a classification head on top of Inception V3, an image classification neural network, and implemented a Flask server to handle the data processing of the neural network and receive images from the application.

NLP-Based Deanonymizing of Discord Messages *Dec 2017*

- Predicts the sender of a message with 98% accuracy using support vector machines (SVM).
- Worked in a group of two to collect messages from various Discord servers to create a text classification program.

Publications

DZiG: Sparsity-Aware Incremental Processing of Streaming Graphs *April 2021*
Mugilan Mariappan, Joanna Che, and Keval Vora *European Conference on Computer Systems (EuroSys)*

Awards

NSERC Undergraduate Student Research Award *Summer 2019*
Best Poster Award (with Mugilan Mariappan), CS Research Day at SFU *October 2019*
Grow Scholarship for Women in Computing Science *Spring 2018*