Ryan Y. Tanaka

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EDUCATION

University of Hawaii at Manoa   Honolulu, HI
Master of Science in Computer Science; GPA: 3.92   *Jan. 2017 – July 2019 Expected*

University of Hawaii at Manoa   Honolulu, HI
Bachelor of Arts in Communicolgy; Major GPA: 3.45   *Aug. 2010 – May. 2014*

EXPERIENCE

Graduate Research Assistant   **Concurrency Research Group**   *Jun. 2018 - Present*
WRENCH v1.0.0 beta - v1.5: distributed computing simulation framework (C++ 11, GoogleTest, CMake)

○ Developed user and internal API for logging and obtaining simulation data from core services.
○ Designed a backtracking search algorithm that generates suitable Gantt chart layouts for plotting multicore CPU utilization data. Resulted in the discovery and resolution of a major resource allocation bug.
○ Implemented the decentralized network coordinate system, Vivaldi, into a network proximity service.
○ Wrote unit tests for 11 new features and maintained a test coverage rate of at least 90 percent.

WRENCH Pedagogic Modules: distributed computing courseware (C++ 11, Javascript, Node, D3, Docker)

○ Created a visualization tool that allows users to execute WRENCH simulations through the browser and view interactive SVG visualizations of their data.
○ Developed 3 SVG visualizations with D3 that are currently being adopted into the core WRENCH codebase.
○ Incorporated OAuth2 into the application and developed a pipeline for collecting user usage data.

Software Developer   **Environmental Research and Design Lab**   *Aug. 2017 - Present*
SurveyAdmin: web application for distributing online surveys (Python, Flask, Javascript, SQL, Postgres)

○ Eliminated data acquisition delay time by directly connecting application component with Postgres database.
○ Implemented create, read, update, and delete functionality into the web application.
○ Configured a Vagrant environment with project dependencies and database schemas provisioned so that incoming student developers have an easier time developing and testing locally.

Robotics Coach   **Maryknoll School**   *Aug. 2016 - Apr. 2017*

○ Guided team to a 1st place victory out of 47 teams at the 2016 Aloha Vex IQ Qualifier, and a 2nd place victory out of 35 teams in the autonomous category of the Vex CREATE U.S. Open Robotics Championships.

PROJECTS

○ **MPI Reduction Algorithm Implementation and Benchmarking** Implemented 3 Message Passing Interface reduction algorithms from scratch, then benchmarked them against a newly proposed greedy algorithm using a range of message sizes on a simulated HPC cluster platform. (C, Python)
○ **Nasa Space Apps Challenge World Semi-Finalist** Created a revolving sun weather module and UI menu components in C# for a Unity3d game that simulates life on Mars. Our team exhibited the game at TEDxHonolulu 2016.
○ **AT&T Mobile App Hackathon 2016 2nd Place Winner** Coded an Android application GUI in Java and XML for an IoT smart mailbox project and pitched the idea to panel of judges.

AWARDS

○ **Intel Student Ambassador Certificate of Appreciation Q1 2018**
○ **Spring 2017 Office of Graduate Education Dean's Achievement Scholarship**