

Ronald Chhua

☎ (916) 833-0352 | ✉ ronchhua321@gmail.com | 🌐 <https://ronchhua.github.io/>

Education

University of California, Santa Cruz (UCSC)

BACHELORS OF SCIENCE IN COMPUTER SCIENCE | GPA: 3.57

Santa Cruz, CA

Sept 2018 - June 2022

Work Experience

Mayo Clinic

SOFTWARE ENGINEER INTERN

Rochester, MN

Oct 2021 - Present

- Working for the Center for Digital Health on the Digital Data Products team
- Created a Python script to intake JSON table outlines and generate dummy datasets from custom client-field constraints
- Integrated OAuth 2.0 with Azure AD for FastAPI and Dash microservices in Docker containers, Buildah, and Podman
- Configured several backend VPC and Load Balancing cloud services in GCP for starter kit applications created from software factory

CUNA Mutual Group

SOFTWARE DEVELOPER INTERN

Madison, WI

June 2021 - Aug 2021

- Created stored procedures to retrieve transformed data that were outlined in XSLT data feed files from 50+ tables in Microsoft SQL Server
- Increased code security by 8% in life annuity apps by migrating the logging system from being DLL-based to a backend application via HTTP
- Designed multiple API endpoints in C# to return metadata information for 1,000+ of CUNA's business partners and clients

GUII Lab

RESEARCH ASSISTANT

Santa Cruz, CA

Feb 2021 - June 2022

- Enhanced an existing Parallel Programming research simulation with new application features using Vue.js, Vuetify, and Web APIs
- Integrated Community Models for user studies by building 7+ unique Glyph state graphs from player event data using D3.js data visualizations
- Streamlined the recommendation system for comparing efficient board state solutions between 450+ end users and participants
- Increased unit testing coverage up to 95% for core Vue components and Vuex state modules with Jest and Vue Test Utils

UCSC Baskin School of Engineering

UNDERGRADUATE READER

Santa Cruz, CA

Jan 2021 - June 2021

- Assisted for a class of 250+ students with lab assignments focusing on Functional and OOP programming languages
- Graded multiple projects ranging from a make utility clone with Perl and a Mini Basic language interpreter in Scheme
- Provided written feedback and guidance for technical concepts explored and tested upon in coursework and programming assignments

Projects

Resilient Kubernetes Cluster Availability (Capstone) — Kubernetes, ETCD v3, Python

- Collaborated with Dell Technologies to build a protocol for enhancing the resiliency of hosting stateful etcd pods in a kubernetes cluster
- Designed health monitoring routines using the etcd api to queue migration events for unstable pods and maintain failure tolerance
- Utilized the Kubernetes Python Client to spread etcd members evenly across multiple domains and racks, reducing "blast radius" within a cluster

Distributed Fault-Tolerant Key-Value Store — Node.js, Express.js, Python, Docker

- Implemented a causally consistent KVS to properly handle out-of-order HTTP requests made to an Express app
- Metadata (VCs) propagation and broadcasting are implemented to enforce data replication and causal consistency
- Created replications of KVS using Docker containers and wrote python scripts to test replicated states

Genetic Pathfinding Simulator — Java, Swing

- Developed a grid GUI to show the natural selection process on finding paths between a start and end location
- Implemented angles and distances as movement vectors and obstacles to generate complex pathfinding
- Optimized the pathfinding using distanced-based fitness resulting in fewer computed generations

Skills

Languages Python, Java, SQL, JavaScript, HTML, CSS
Technologies Docker, TensorFlow, Node.js, Vue, Express.js
Tools Linux, Git, Docker, Postman, VS Code, Google Cloud Platform, Kubernetes, PostgreSQL, Scrum

Extracurriculars

Data Analyst (Harvest Leader)

HARVEST SACRAMENTO

Oct 2017 - Jan 2019

- Tabulated product availability, site dimensions, harvesting data, and community events in Excel and Word
- Extrapolated seasonal projections from various community events and seasonal product availability