





CRISTIAN GONZALES

INCOMING SOFTWARE ENGINEER I AT NORTHROP GRUMMAN

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EDUCATION

University of California, Santa Cruz

Computer Science, B.S.

Expected Graduation: June 2019

EXPERIENCE

Northrop Grumman

Technical Intern

June 2017 – August 2017

- Interfaced with NASA's GMSEC API to build a proof-of-concept visualization tool which tracked health statuses of satellites. This inspired a new feature in another Northrop Grumman product.
- Ported ephemeris data, via web sockets, across multiple Northrop Grumman domains/applications.
- Implemented basic dependency injections, using the Google Guice framework, across the codebase.

PROJECTS

Fault Tolerant and Scalable Key-Value Store (KVS)

A scalable Docker cluster of nodes that is fault tolerant and eventually consistent.

- Nodes were designed using a RESTful API interface (Python Flask), so clients may use the KVS and add nodes.
- Favors availability over strong consistency, per CAP theorem, so eventual consistency is guaranteed in light of network partitions, with a property of bounded staleness for stale data after network partitions are healed.
- After a network is healed, nodes with different values of the same key are resolved by causal order (if they are causally concurrent, ties are resolved using local time stamps on replica nodes).
- Uses consistent hashing to dynamically and uniformly distribute unique keys across all nodes in the network.

SwiftSunCalc

A Swift micro-library for finding sun and moon positions/phases.

- A direct Swift port of the original suncalc.js microlibrary, created and maintained by Vladimir Agafonkin on GitHub.
- Used to calculate sun position, sunlight phases (times for sunrise, sunset, dusk, etc.), moon position and lunar phase for the given location and time.

Amazon Discounts Finder

Command line interface (CLI) tool to find heavily discounted items on the Amazon marketplace.

- Used Python bindings for the Selenium WebDriver and the BeautifulSoup library to scrape for discounted Amazon items from <https://camelcamelcamel.com/>, an Amazon price tracker.
- After finding items, a Python client for the Amazon Simple Product API was used to place items in the user's Amazon cart.

SKILLS

LANGUAGES: C, Java, Python, SQL

OTHER LANGUAGES: CSS, HTML, JavaScript, Shell scripting, Swift

TOOLS: Android Studio, Docker, Eclipse, Git, L^AT_EX, PostgreSQL, PyCharm, Xcode

CONCEPTS: Agile Development (Scrum framework), Code Coverage, Continuous Integration, Dependency Injections, Distributed Systems, RESTful APIs

References available upon request.