Thomas Cannon

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EXPERIENCE

KBR, NASA Ames Research Center, CA — *Software Engineer Intern*

September 2021 - Present

- Developed the GUI for the SHERPA rover traverse planner using React, Express, Material-UI, Leaflet, and three.js
- Added infrastructure to the project including a linter, a testing environment using Jest, and dependency management through webpack and npm

Arista Networks, Santa Clara, CA — *Software Engineer Intern*

June 2021 - August 2021

- Designed, developed and tested a VLAN translation feature for Arista's EOS linux based operating system used by ISPs
- Configured basic network topologies for testing features on the switches

USRA, NASA Ames Research Center, CA — *Engineer Intern*

June 2020 - September 2020

- Designed and developed framework software for the *Troupe* rover platform using NASA's Core Flight System (cFS), including a camera app and controller app
- Created rover simulations using AirSim and Unreal Engine 4, allowing team members to research multi-rover autonomy using the rover platform
- Developed C++ program to capture data from the simulator and write it to Linux virtual devices using the v4l2loopback kernel module

Cisco, San Jose, CA — *Engineer Intern*

June 2019 - August 2019

- Created Selenium WebDriver Python scripts for automated testing of the TLS implementation of the Cisco Firepower firewall
- The scripts allow the team to retrieve security information from 1000+ sites, and generate HTML for readability

NASA Ames, Mountain View, CA— *Volunteer Intern*

January 2017 - December 2017

- Integrated Lua scripting language into the FlightZ flight simulator using Lua C API.

PROJECTS

R3FPS — *React, Node.js, react-three-fiber, RxJS*

A custom built 3D scene editor available from a web browser. Features a custom collision detection library using GJK and EPA, and k-D trees for efficient collision pruning.

R3Chess — *React, Express.js, Redis, react-three-fiber*

A multiplayer chess web application featuring custom 3D graphics. Features a backend API written with Express that uses Redis to store the state of active games.

Flux Logic — *React, Node.js, Material UI, RxJS, GitHub Actions*

A web application for logic simulation. The app features a logic simulation extensively unit tested using Jest. Utilizes a continuous integration workflow via GitHub Actions to ensure quality.

EDUCATION

UC Santa Cruz
Computer Science: Game Design, B.S.

September 2018 - Present

GPA: 4.0

Relevant classes: Introduction to Computer Graphics, Introduction to the Analysis of Algorithms, Principles of Computer Systems Design, Data Structures and Algorithms, Distributed Systems, Machine Learning, Linear Algebra, Vector Calculus

SKILLS

Programming languages: C, C#, C++, Python, Lua, JavaScript, Bash

Web development: React, Node.js, Express, three.js, react-three-fiber, HTML, CSS

Operating systems: Linux, Windows

Tools: Git, CMake

Game engines: Unity, Unreal Engine 4 (UE4)

Content creation: Blender, GIMP, Inkscape, FLStudio

Other: RxJS, Graphics, OpenGL, video4linux2, librealsense2, NASA's cFS

OTHER EXPERIENCE AND AWARDS

Group Tutor - tutored students throughout college in classes including Computer Graphics, Assembly Language, and Python Programming