

# Jonathan Carlson

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## Education

### University of California, Los Angeles (UCLA)

M.S. IN COMPUTER SCIENCE

Los Angeles, California

Sep. 2023 - June. 2024

### University of California, Los Angeles (UCLA)

B.S. IN COMPUTER SCIENCE, GPA 3.6

Los Angeles, California

Sep. 2019 - June. 2023

- Coursework: Neural Networks and Deep Learning, Operating Systems, Algorithms, Networking, Programming Languages, Computer Vision, Machine Learning, Computer Systems Architecture, Compilers, Security, Graphics, Artificial Intelligence
- Dean's Honors List in Winter 2020/21/23, Spring 2022

## Work Experience

### Ciena

EMBEDDED SOFTWARE ENGINEERING INTERN

Petaluma, California

July 2023 - Sep. 2023

- Enabled improved memory safety of C based firmware by compiling no\_std Rust (added support for heap allocation) for the ARC processor using rustc\_codegen\_gcc.
- Fixed undefined behavior in C by using static analysis tools (Coverity).
- Improved testing for internal tools to maintain backwards compatibility (after breaking it).

### Tibit Communications (acquired by Ciena)

FIRMWARE ENGINEERING INTERN

Petaluma, California

June 2022 - Sep. 2022

- Implemented IEEE 802.1X Key derivation function (KDF) to generate keys necessary for MACsec (IEEE 802.1AE) Key Exchange (MKA).
- Improved internal tools to increase engineer productivity as well as adapted internal tools to be customer facing which simplified and extended configuration of Tibit's devices.
- Created a calibration model tester in Python to compare different calibration models which were used to optimize calibration times.

### HydroPoint Data Systems

ENGINEERING INTERN

Petaluma, California

Jan. 2021 - Sep. 2021

- Utilized C# machine learning libraries to help them optimize their water leak detection capabilities.
- Successfully handled my workload for both this internship and 4 summer courses at UCLA.

## Projects

### Insta-Chef (CS 35L Project)

FULL STACK DEVELOPER

Los Angeles, California

Feb. 2021 - Mar. 2021

- Created a recipe-finding website that leverages ingredients you have in your kitchen using React and Firebase Realtime Database.
- Led the design of a user-specific Pantry where the user can search for recipes based on a selected ingredient.
- Styled the Login and Pantry pages to make them accessible for mobile users.

### Micromouse (IEEE at UCLA Project)

IEEE STUDENT BRANCH AT UCLA

Los Angeles, California

Oct. 2020 - Mar. 2021

- Designed a PCB which detects walls using IR sensors and receivers and sends that data to an STM32 microcontroller.
- Designed a maze-solving algorithm that used flood fill to navigate any unknown maze

### IDEA Hacks

CORPORATE COMMITTEE MEMBER

Los Angeles, California

June. 2020 - Jan. 2021

- Connecting and securing sponsorships with tech companies such as Qualcomm, to fundraise for the largest hardware hackathon on the west coast, IDEA Hacks.

## Skills

**Programming** C++, C, Java, Python, JavaScript, Arduino, R, Bash

**Technologies** PyTorch, React, Firebase, Git, TensorFlow, LaTeX

## Honors & Awards

### Eagle Scout

BOY SCOUTS OF AMERICA, TROOP 9

Petaluma, California

January 2017