



# Simeon Tran

COMPUTER SCIENCE GRADUATE STUDENT

Santa Cruz, CA

[simeonat.github.io](https://simeonat.github.io) | [SimeonAT](#) | [simeon-tran](#)

## Education

### University of California, Santa Cruz

M.S. IN COMPUTER SCIENCE AND ENGINEERING

B.S. IN COMPUTER SCIENCE AND ENGINEERING

*Santa Cruz, California*

*Sept. 2023 - PRESENT*

*Jul. 2019 - Jun. 2023*

## Master's Thesis

### OpenThread ASCON Fork for ESP32 Devices

[HTTPS://GITHUB.COM/UCSC-THREADASCON](https://github.com/UCSC-THREADASCON)

*Jan. 2024 - Present*

- Removed encryption algorithm used in OpenThread (AES) and replaced it with the ASCON encryption algorithms
- Forked and modified ESP-IDF source code to allow 802.15.4 compatible ESP32 devices to run my modified OpenThread ASCON fork

## Experience

### Tech4Good Lab

LEAD RESEARCH ASSISTANT

*Santa Cruz, California*

*Jun. 2023 - Dec. 2023*

- Oversaw the development of an Express.js and OpenAPI server that used ChatGPT to create personalized learning curriculums
- Helped team members write unit tests to help check the functionality of the backend server
- Conducted in-house research studies on explore how ChatGPT can be used to automate the creation of personalized learning pathways
- Developed the initial UI/UX flowchart for a web application used to design personalized learning experiences

### Tech4Good Lab

WEB DEVELOPER TEAM LEAD

*Santa Cruz, California*

*Apr. 2023 - Jun. 2023*

- Used Ionic and Capacitor to create infrastructure to allow all existing Angular projects to run as iOS and Android apps
- Implemented Google OAuth login on iOS and Android using the Codetrix Capacitor Plugin
- Wrote detailed documentation and onboarding instructions for new members to get them acquainted with Ionic

### Sphinxox Inc.

INFORMATION TECHNOLOGY INTERN

*Torrance, California*

*Jun. 2022 - Sept. 2022*

- Responsible for day-to-day management of company's Synology NAS, including doing weekly backups and transferring important files onto server
- Managed Tailscale VPN that allows all employees to remotely access NAS and printers located in main office
- Used Docker to self-host Vaultwarden password manager on NAS in order to securely store employee passwords
- Used React and Node.js to develop a simple web application to allow employees to utilize Git version control without any knowledge of version control

## Skills

### Embedded Systems

ESP-IDF, OpenThread

### Back-end

OpenAPI, GraphQL, PostgreSQL, Docker, Firebase

### Front-end

React, Angular, HTML5, CSS

### Programming

C/C++, Python, Typescript/Javascript, Haskell

### Soft Skills

Tutoring, Mentoring

### Languages

English, Vietnamese

## Projects

## Daily Time Manager Web Application

*Santa Cruz, California*

[HTTPS://GITHUB.COM/SIMEONAT/BAGEL.IO/TREE/MAIN](https://github.com/SimeonAT/Bagel.io/tree/main)

*Sept. 2022 - Dec. 2022*

- Worked with four fellow software engineering classmates to create a web app that generates visualizations based on completed tasks on a user's to-do list
- Designed the UI for the task cards and to-do list
- Developed both the React front-end and Node.js back-end implementations for the login and register pages

## Fractal Terrain Generation Program for Python Course

*Remote*

[HTTPS://USERS.SOE.UCSC.EDU/~PANG/30/S20/PROG1/TERRAIN\\_SIMEON.TXT](https://users.soe.ucsc.edu/~pang/30/s20/prog1/terrain_simeon.txt)

*Apr. 2020*

- Used Python Turtle Module and starter code provided by the class TA to create program that recursively generates random terrain
- Developed extra features beyond what was asked, which encouraged graders and course faculty to label this program as a "star solution" on course website (<https://users.soe.ucsc.edu/~pang/30/s20/>)

## Video Game Demo using Python and PyGame

[HTTPS://GITHUB.COM/SIMEONAT/SPACEVIEWERPYPYGAME](https://github.com/SimeonAT/SpaceViewerPyGame)

*Dec. 2020 - Dec. 2021*

- Created single-player game demo where players interact with objects in outer space
- Implemented RPG-style text dialogue using object-oriented programming
- Applied knowledge of data structures by creating a binary tree to store RPG text-box objects
- Integrated pixel art sprites with Python code to create lively animations

# Teaching

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## UC Santa Cruz Learning Support Services

*Remote*

PYTHON COURSE TUTOR

*Sept. 2020 - Jun. 2021*

- Held weekly remote tutoring sessions with diverse students for Introduction to Python course
- Assisted students on various Python concepts and basic object-oriented programming, assisting them in performing well on their assignments and exams
- Demonstrated knowledge of Python by creating programming examples and activities

## UC Santa Cruz Academic Excellence Program

*Remote*

PRECALCULUS TUTOR

*Oct. 2021 - Dec. 2021*

- Was a tutor/mentor for Professor Morales-Almazan's Precalculus class, under the recommendation of the professor himself
- Helped students with Precalculus topics that they struggled with, allowing them to be better prepared for the homework and exams
- Gave freshman students from different backgrounds advice on how to navigate the university, in addition to assisting them with math

# Extracurricular Activities

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## Richardson Middle School

*Torrance, California*

MENTOR

*Sept. 2014 - Sept. 2016*

Collaborated with fellow mentors to help students with presentation and research skills for their First Lego League Research Project.

## South High School Robotics Club (Torbots)

*Torrance, California*

ARDUINO PROJECT PROGRAMMER

*Dec. 2015*

Programmed Arduino microcontrollers for a Christmas-themed carnival shooting game to be presented at the December fundraisers.

## Keio University English Speaking Club

*Remote*

ENGLISH SPEAKER VOLUNTEER

*Jun. 2021 - Nov. 2021*

Help Keio University students practice their English through conversation and guessing games.