

Andrew H. Lu

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Education

- University of California, Santa Barbara, Class of 2021
- B.S. in Computer Engineering, Cumulative GPA: 3.86
 - College of Engineering Honors Program
 - Relevant Coursework: Computer Networks, Sensor and Peripheral Interface Design, Mobile Embedded Systems, Distributed Systems, Adv. App Programming

Skills

- C/C++, Java, and basic Python programming
- JavaScript, Node.js, React, HTML, and CSS
- Experience working in an Agile / Scrum environment
- Proficiency with tools: UNIX, Git, GitHub, Perforce, SQL, MongoDB, CI/CD Systems, Shell Scripting, VS Code, Heroku, Autodesk Fusion 360, and Microsoft Office

Experience

Software Development Intern, Smart Speaker Platform - Sonos Inc., Boston, MA Jun 2019 - Sep 2019

- Developed a new interface for playing content from an HTTP source using the clocking mechanisms for AirPlay2, complete with support for metadata, radio stations, radio playlists, and more.
- Updated device cache and test environment interfaces to implement type safety and allow for automated CI testing.
- Assisted in creating an internal Electron app for prototyping voice experiences using the Control API.

Undergraduate Lab Assistant, CMPSC 56 and CMPSC 48 - UC Santa Barbara Jan 2020 - Present

- Groomed and managed 11 epics for a Spring Boot course search application based on user testing and feedback.
- Mentored and performed code reviews for two teams of students in CMPSC 56, a web application development course teaching legacy code development using Java, Spring Boot, Git / GitHub, Agile workflows, and CI/CD testing.
- Mentored students about Agile, Node, React, and Test-Driven Development, in CMPSC 48, a team-based project development course aimed at exposing students to development practices used in industry.

Undergraduate Lab Assistant, ECE 5 - UC Santa Barbara Jan 2019 - Mar 2019, Jan 2020 - Mar 2020

- Mentored students about C++, Arduino, and circuit theory, in ECE 5, a project-based engineering course aimed at exposing freshmen to the techniques used to prototype and design basic circuits.
- Held weekly office hours and project help sessions for students to get assistance outside of lab hours.
- Organized the annual ECE 5 Science Fair, where students present their projects at the end of the quarter.

Internal Vice President and Webmaster - UCSB IEEE Student Branch, Santa Barbara, CA May 2018 - Present

- Design a new Jekyll-based website, complete with member database, resume book, and apparel store.
- Build a web application to manage IEEE lab occupancy, log member entries, and verify membership status.
- Manage scheduling of student projects, workshops, officer lab hours, and sales / inventory of organization's apparel.

Projects (View my full list of projects at andrewhlu.com)

DDR Pad - Bluetooth dance pad designed using STM32 to play "Dance Dance Revolution". Feb 2020

- Created using the STM32L476 development board, HC-05 for Bluetooth, and Python script for emulating keystrokes.
- Base designed using plywood and polycarbonate, custom button pads designed using keyboard switches and springs.

Encrypted Wi-Fi Keyboard - Wireless keyboard capable of securely sending keystrokes over long distances. Jan 2020

- Developed a Linux program in C++ capable of reading raw USB keyboard input and communicating via TCP or UDP.
- Developed a Windows program in Python capable of decoding encrypted input and emulating keystrokes with Win32.

Dodge the React - Dodge angry reacts spawned by outsiders by physically running in a VR world. Oct 2019

- Created using A-Frame(WebVR), CockroachDB SQL database, socket.io, and Express using HTML/CSS, JS, and Node.
- Utilized data changefeeds in conjunction with sockets to implement real-time gaming logic using a SQL database.

Type Type Revolution - Battle Royale typing contest to type the fastest while sabotaging other players. Feb 2019

- Server-less web application created using Firebase Realtime Database and written in HTML/CSS and JavaScript.
- Developed database structure, algorithm for counting words-per-minute, room system, and design for webpage.

Honors and Awards (View the full list at andrewhlu.com)

- **Ed Hass Scholarship** - Awarded to one UCSB junior in CE for strong academics and community service Apr 2020
- **Dean's Honors Recipient, 8 Quarters** - Awarded to students with a GPA of 3.5 or higher Mar 2020
- **Dodge the React** - Winner, Cockroach Labs API Prize, Cal Hacks 2019 Oct 2019
- **Type Type Revolution** - Winner of Best Game/Game Design Award, SLO Hacks 2019 Feb 2019