

# Alex Severinghaus

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[github.com/alexseveringhaus](https://github.com/alexseveringhaus) • alexsev.com

## EDUCATION

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**University of Southern California, Viterbi School of Engineering** **August 2023 - May 2027**  
*Bachelor of Science in Computer Engineering & Computer Science* *Los Angeles, CA*  
**GPA:** 3.96/4.0, **Honors:** USC Dean's List Scholar, Dean's Research Award  
**Relevant Coursework:** Software Development, Distributed Systems for IoT, Data Structures and Algorithms, Digital Circuits, Embedded Systems, Discrete Methods in CS, Probability Theory, Linear Algebra, Calculus III

## EXPERIENCE

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**Scripps Institution of Oceanography, UC San Diego** **May 2024 - August 2024**  
*Software Engineering Research Intern* | [Github Link](#) *San Diego, CA*

- Designed object-oriented software to perform experiment that reduced costs of scientific projects by ~\$300,000
- Implemented Python parsing functions to manipulate a large ocean modeling data set of ~200,000 entries
- Visualized Pareto frontiers to maximize effectiveness and minimize cost of experimental float arrays

**CURVE (Center for Undergraduate Research in Viterbi Engineering)** **August 2024 - Present**  
*Undergraduate Researcher, USC Viterbi's Interaction Lab* | [Github Link](#) *Los Angeles, CA*

- Build socially assistive robots using Raspberry Pi to provide study companions for users with ADHD
- Implement Gaussian Process reinforcement learning in Python to personalize robot behavior to user preferences
- Collaborate with 10+ PhD and ~50 other student researchers to better implement hardware and software design

**Commonlands LLC** **June 2022 - August 2022**  
*Engineering and Marketing Intern* *San Diego, CA*

- Shadowed an optical engineer to execute marketing strategies for a local camera and optics company
- Created individual HTML/CSS product pages and advanced search engine optimization for ~50 lenses
- Developed product catalogs and spreadsheets to improve outreach, recording precise engineering specifications

## PROJECTS

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**Rideshare App** | [Github Link](#) | *Java, MySQL, React, AJAX, Google Maps API*

- Created a Java/React-based web app to promote USC rideshare with login functionality using MySQL schema
- Interfaced asynchronous frontend calls to Java servlets and Google Maps API features with AJAX framework
- Led a diverse team of 8 other CS students, coordinating Git version control for effective development strategies

**Noise Monitoring System** | [Github Link](#) | *IoT, Python, Distributed Computing, MQTT*

- Designed end-to-end IoT system to collect data on Raspberry Pi and send data via MQTT for remote processing
- Performed signal processing in Python to analyze noise level then visualized results with Python-controlled LED

**Personal Website** | [alexsev.com](https://alexsev.com) | [Github Link](#) | *Python, AWS, Flask, HTML/CSS*

- Constructed a full-stack web app to highlight personal experiences and projects using Python Flask backend
- Built a coherent user interface with HTML/CSS frontend; deployed website with Amazon Web Services EC2

**Market Strategy Neural Network** | [Github Link](#) | *Python, TensorFlow, Keras, Yahoo Finance API*

- Developed a Keras Sequential neural network in Python to predict market trends using the Yahoo Finance API
- Added rolling mean/volatility features to improve accuracy by ~25%; reduced overfitting with L2 regularization

## SKILLS

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- Languages: Python, Java, C/C++, SQL, JavaScript, HTML, CSS, Unix Shell
- Technologies: VS Code, Eclipse, Git, MySQL, AWS, Docker, IntelliJ, Virtual Machines, Raspberry Pi
- Frameworks: TensorFlow, Keras, Sklearn, React, Jakarta EE, AJAX, Flask