Spencer Cowles

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Education

University of California, San Diego — La Jolla, CA

Bachelor of Science *in Mathematics-Computer Science,* ***Minor*** *in Economics* — *Sep. 2023 - June 2026*

Relevant Coursework: Linear Algebra, Data Structures and Algorithms, Graph Theory, Systems Programming, Probability, Statistics, Modern Applied Algebra, Real Analysis, Discrete Math, Theory of Computability

Experience

Computer Science Fellow — July 2024 – August 2024

Headstarter — *Virtual*

- Built a pantry food tracker application to monitor inventory levels and minimize food waste using Python and SQLite, reducing inventory mismanagement by over **30%** through automated alerts and data tracking features
- Developed a personal website to showcase my projects and professional experience using HTML, CSS, and JavaScript, achieving a responsive design
- Collaborated with a team of **4** fellows to implement best practices in software development, including version control and agile methodologies, delivering a project within 2-week sprint cycles with zero critical bugs

Math Tutor — Feb. 2021 – Feb. 2022

Mathnasium — *Phoenix, AZ*

- Tutored over **40** students ranging from elementary to high school, improving average test scores by **15%** through customized lesson plans and targeted problem-solving sessions
- Developed personalized lesson plans for each student based on a detailed assessment of skill levels
- Consistently monitored student progress on a weekly basis, tracking academic performance. Collaborated with teachers and staff to address individual student needs, providing tailored feedback to parents. Organized and led **20+** parent meetings to review student growth, identify areas for improvement, and develop actionable plans

Summer Teaching Assistant — June 2024 – August 2024

All Saints Episcopal Day School — *Phoenix, AZ*

- Supported classroom instruction for **8** different classes, assisting teachers in developing and delivering **50+** lesson plans for students in grades K-8, adjusted learning plans for each individual student to their learning levels
- Facilitated small group activities and tutoring sessions to reinforce core subjects, including math and reading, resulting in a **20%** improvement in student engagement scores, making every kid included in each activity
- Organized **15+** educational games and interactive activities to promote student engagement, leading to a 95% student participation rate in after-class activities, commended on how I was able to keep the kid's attention

Projects

Triton UAS (Unmanned Aerial Systems) | *C++, Python* — June 2024 – Present

- Developed and optimized path planning algorithms to improve the team's autonomous drone's ability to navigate and capture aerial images, allowing for the creation of a map while finishing the target mission
- Implemented pathfinding techniques such as **A*** and **RRT***, ensuring the drone reached designated targets while maximizing time in the mission to do other tasks.
- Integrated mapping functionality to stitch **100+** high-resolution images into cohesive maps while in flight
- Collaborated with a team of **5** team members, conducting **unit tests** and iterating on designs to meet rigorous competition standards and optimize performance.

Personal Website | *JavaScript, HTML, CSS, React* — June 2024 – Present

- Developed a personal website using React.js to showcase **2** projects and a professional portfolio
- Implemented responsive design and interactive elements for enhanced user experience
- Used GitHub for version control, managing **10+** commits per week to maintain code quality and ensure a streamlined development process.

Skills

Languages/Frameworks: Java, Python, C, JavaScript, HTML/CSS, React, Node.js
Developer Tools/Libraries: Git, Docker, VS Code, Visual Studio, PyCharm, IntelliJ, pandas, NumPy, Matplotlib