

Devanshi Jain

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EDUCATION

University of California, San Diego

Sep 2021 – Jun 2025

B.S. Mathematics & Computer Science

Relevant Coursework: Data Structures and Algorithms, Scientific Debugging, Web Development - Web Client Language Design, Artificial Intelligence: Probabilistic Reasoning and Decision-Making, Computer Organisation, Computer Vision, Theory of Computability, Deep Learning, ODE, Linear Algebra, Probability and Statistics, Discrete Math, Real Analysis.

WORK EXPERIENCE

Center for Energy Research

Sep 2022 – Present

Software Engineering Intern

- Created a user-friendly smart-plug schedule optimization application which reduced building energy consumption by 20%.
- Utilized Numpy, Pandas, Matplotlib, and Seaborn to create insightful data visualizations that informed strategic decisions.
- Led the formulation of energy-saving criteria for 8+ campus laboratories, driving UCSD's sustainability initiatives forward.
- Presented data-driven energy savings in meetings with 6 stakeholders across 4 campus buildings, securing approval.

Computational Modelling & Flow Physics Lab

Jun 2023 – Aug 2023

Student Researcher

- Designed and optimized turbojet and turbofan engine compressors using ANSYS' turbomachinery tools.
- Constructed and simulated compressor models in CFX, drawing from NASA's GE90 engine as used in Boeing 777s.
- Led response surface optimization (RSO), achieving a pressure ratio enhancement of over 12.5% for the initial two stages.
- Utilized 200,000 high-performance computing hours on the San Diego Supercomputer for optimizing over 10,000 parameters.
- Presented at the 2023 SCCUR Annual Conference at CSU Fullerton and the Summer Research Conference at UCSD.

Kastner Research Group

Nov 2021 – Present

Embedded Systems Lead

- Developed an autonomous underwater vehicle with the Triton Robosub team under Professor Ryan Kastner's mentorship.
- Specialized in optimizing hydrophone array systems for remote underwater signal perception and precise navigation.
- Developed signal processing algorithms, including peak detection, which improved audio analysis accuracy by 15%.
- Integrated the Multiple Signal Classification algorithm into the sub's controls, enhancing real-time signal processing.
- Qualified for semi-finals of the Robosub 2023 Competition held in San Diego out of 35 teams representing 5 countries.

COSMOS - 'Hacking for Oceans' Project

Jun 2022 – Jul 2022

Teaching Assistant

- Led a 6-week long lab section of 25+ students in developing autonomous boats with sensors to collect oceanographic data.
- Instructed students in configuring long range microcontrollers to enable remote networking and telemetry over 4 miles.
- Directed students in programming GPS navigation and real-time sensor data visualization to actively monitor water quality.

LEADERSHIP EXPERIENCE

IEEE at UCSD: Leading 6+ workshops as Technical Chair, focusing on web dev. and optimizing LLMS for 25+ students

Women in Computing: Mentoring a team of 5 undergraduates in mobile application development as a Team Project Mentor

Society of Undergraduate Mathematics Students (SUMS): As Workshops Chair, organized and hosted 10+ workshops, including a 3-part Putnam exam series attended by 20+ students.

Curriculars: Member of the Golf club, the Squash club, pursuing a private pilot's license, and volunteering at a cat shelter.

PROJECTS

Supercomputing Club at UCSD

- Engineering a Raspberry Pi Cluster for executing HPC benchmarks and distributed ray tracing.
- Developed software for system health reporting and real-time power tuning as part of the Rust User Group.

TECHNICAL SKILLS

Languages: C/C++, Python, Java, Javascript, Typescript, Rust, HTML, CSS, Bash, Assembly, C#, Kotlin, Go, MATLAB

Developer Tools: Git, Linux, Ajax, DOM, Docker, Netlify, Vim, LaTeX, Tensorflow, OpenCV, Ansys, Xilinx, GDB, OpenGL

Frameworks: React.js, Node.js, Flask, Express.js, MongoDB, Flutter, Next.js, Firebase, REST APIs, FastAPI, PostgreSQL