Gautam Ganesh

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EDUCATION

University of California, San Diego *B.S. Mechanical Engineering*   **Sep 2021 - Jun 2025**

Relevant coursework: Computational Methods & Design, Advanced Fluid Dynamics, Thermodynamics, Solid Mechanics, Material Science, Signals & Systems, Statics & Dynamics, Optics, Vibrations, MATLAB, Linear Circuits, Business Project Management

WORK EXPERIENCE

Student Researcher – AI & Machine Learning, DERConnect Lab - *UC San Diego*   **Oct 2025 - Present**

- Built an application for DERConnect to upload, process, and visualize large phasor datasets, enabling automated detection and summarization of grid disturbance events
- Developed an ML pipeline for classifying smart-inverter and microgrid events using time-series features, improving accuracy and usability for researchers and operators by 75%

Mechanical Engineering Intern, Lufthansa Technik - *Maintenance, Repair & Overhaul*   **Aug 2024 - Sep 2024**

- Conducted torque, stress, heat, and tolerance analyses on aluminum, steel, carbon fiber, and titanium to optimize critical commercial aircraft flight control components (thrust reversers & radomes), ensuring compliance with engineering standards
- Optimized internal Large Language Model workflows (Component, Aircraft, and Structural Repair Maintenance manuals), streamlining team processes and enhancing efficiency by 50% during inspections and repairs

Technology and Innovation Lab Intern, Siemens - *Engineering Consulting*   **Jul 2023 - Sep 2023**

- Streamlined 3D CAD models in Blender and SketchUp, reducing file sizes by over 97% (from 800 GB to < 1 MB), enabling usage on VR platforms, smartphones, and tablets
- Developed a custom computer vision solution in Python to generate safety violation alerts on the shop floor, reducing accidents by 80%

Supply Chain Analyst Intern, United Parcel Service (UPS)   **Aug 2022 - Sep 2022**

- Analyzed KPIs on productivity, operational efficiency, and aircraft utilization through a comprehensive review of end-to-end tracking data to reduce time in transit for time-critical vaccine shipments, reducing time in transit by 17% for shipments
- Conducted a study on how UPS's single network structure enhances competitive strengths through optimized efficiency and asset utilization. Result - Additional flight assigned to India via Hong Kong, reducing costs by 63 cents per kilogram

PROJECTS

Multiload Endoscopic Robot Clip Applier, UC San Diego Health - UCSD Capstone Project   **Sep 2024 - Dec 2024**

- Developed an endoscopic clip applier compliant with ISO-9001 standards, seamlessly integrating with Intuitive Surgical's da Vinci robot, achieving an 85% reduction in procedure time
- Developed a system capable of applying 15–20 titanium clips with automatic reloading, optimizing surgical efficiency

Autonomous Soccer Goalkeeper - Autonomous Vehicles Class, UCSD   **Sep 2024 - Dec 2024**

- Developed an autonomous soccer goalkeeper vehicle using OAK-D cameras, Jetson Nano, LiDAR, and GPS with ROS and OpenCV; Achieved 85% shot-blocking accuracy with a 0.3s reaction time and 95% object detection accuracy within 10m
- Devised an innovative algorithm to calculate and visualize ball approach angles, enhancing coaching strategies; the model is now utilized by 10+ high-school coaches, reinforcing tactical decisions during high-stakes competitions

LED Kids Shower Head - Product Design & Entrepreneurship, UCSD   **Sep 2023 - Dec 2023**

- Innovated and implemented a water-saving LED shower head specifically for children, achieving a reduction of up to 30% in water consumption during daily showers, promoting sustainability among young users
- Crafted and delivered a persuasive business model and pitch deck to a panel of investors from Blackstone's Launchpad

UCSD Mechanical and Aerospace Engineering Robotics Competition, *First place / 40 teams*   **Dec 2022**
- Designed and built a robot chassis and drivetrain using Fusion 360, incorporating finite element analysis (FEA) to optimize force distribution and tolerance, ensuring structural reliability under operational loads. Programmed the robot for high-speed pick-and-place tasks with various object shapes, achieving a 50% performance advantage over competing teams

SKILLS, EXTRA-CURRICULARS, AND AWARDS

Technical Proficiency: AutoCAD, SolidWorks, Fusion 360, SketchUp, Blender, Creo, Python, Matlab, C++, Raspberry Pi, Arduino, CAM, FEA, ROS 2, CNN, MLP, PCB design fundamentals, Signal Integrity, DFM, DFA, Statistical Process Control, Oracle ERP
Awards: Investment competition - M.East & N.Africa region - **First place amongst 10,000+ participants, 2021** | **Winner**, British Physics Olympiad 2019 | **Winner**, UKMT Mathematics Challenge (2017-2021), RGS Young Geographer of the Year 2019
UCSD Clubs & Sports: UCSD Unmanned Aerial Systems, Cricket Team, Badminton Team, Soccer Team, Muay Thai