

GABRIEL DUENAS

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EXPERIENCE

FIRST Technical Challenge Team 51

Design Member | September 2023 - February 2024

Led development of numerous subsystems and parts for a competitive robot made within a 2-month period, specifically **leading the creation our end-game subsystem of a drone launcher which had a success rate of 90%** in reaching maximum points during matches.

- Built foundational design principles using different mechanical systems to achieve high efficiency and mastered Fusion 360 features
- Managed electrical and wire management systems between multiple systems and integrated sensors such as vision and odometry to assist with
- **Interleague Tournament Finalist Alliance Captain; 1st Place Inspire Award:** Highest Award in Team attribute and Community Outreach; **SoCal Championships Innovate Award:** Celebrates team with the most innovative design

FIRST Robotics Challenge Team 687

Led and collaborated within a 60+ members team to produce a 29"x29" competitive robot within a 6 week build period, utilizing OnShape and Fusion 360 to design 10+ parts and 3 subsystems. Coordinated between Assembly, Manufacturing and programming subteams.

Design Lead | May 2025 - Present

- Managed project timelines with sub team leads, **observing a major increase in rookie productivity through production of outlined member training plans**
- Performed team-wide communication, **delegating roles and task between 8 design members** and performing routine debriefs and prebriefs to maintain team-wide communication between the 5 different subteams.

Design Member | June 2024 - May 2025

- Created more than **20 technical drawings during our season**, utilizing ASME Y.14 Standardized Technical Data Packages
- Committed twelve hours per week to perform weekly robot designs briefs, collaborate on subsystem design, and perform design approvals with mentors
- Competed in 3 competitions, **winning Aerospace Valley Regional; Personally selected to interview for awards, winning Gracious Professionalism and Excellence in Engineering.**

Engineering Outreach Co-President | June 2025 - Present

- Took initiative to take over and fully rebrand the club, creating it into a **California-registered Non-profit** and **perform recruitment to gain 70+ members**
- Responsible for overseeing the production of outreach lesson plans, maintaining club-wide communication through collaboration with publication officer and usage of Microsoft teams and Instagram to facilitate online announcements. Also responsible for hosting weekly board meetings and bi-weekly general meetings.
- Reached out to **20+ organizations** and partnered with **3 local libraries** to earn sponsors and host STEM outreach events, giving out over **100** volunteer hours.

EDD Electrical Intern - Blackwing Technologies | November 2025 - Present

- Collaborated with a team of 8 disciplinary engineering interns ranging from systems to manufacturing to produce a motorized tank drone and nest-like weighing scale to compete within the 2026 CAMS EDD Project.
- Performed electrical, mechanical, and financial calculations to determine necessary parts which meet the project specifications; later, creating electrical diagrams, CAD models with Fusion 360, and ASME Y.14 Technical Data Packages

COMMUNITY SERVICE

Ruth Bach Public Library Volunteer | June 2024 - Present

- Worked as a weekly summer volunteer, accumulating 80+ volunteer hours
- Prepared and hosted different events such as our weekly young reader's initiative and youth archaeology programs, managing and assisting more than 10 kids at a time.
- Learned branch distribution and the Dewey Decimal Classification to properly sort and shelve books
- Organized and hosted 4-day STEM Summer Program, providing fun and accessible stem activities to 120+ kids ranging all ages while working as the main coordinator and recruiter of 15 volunteers to assist with the program

Downey Columbia Memorial Space Center Volunteer | June 2025 - Present

- Develop familiarity with 20 different exhibits including their history and relevancy to the development of the Aerospace industry in Downey, CA to tour guests. Volunteered 8-12 hours a month.
- Shadowed and hosted Robot Labs, teaching groups of 3-15 kids at a time.
- Prepare and work monthly events such as Astronomy Night, Parents Nights Out, Rocket Fever and Free Family Night, organizing and hosting for as many as 2000 people per event

SKILLS

- **Technical Skills:** Structural Analysis, Robotics, CAD(Fusion 360, Onshape), Proficiency in Spreadsheets (Excel, Google Spreadsheets), Data analysis (graphing, qualitative analysis), Javascript, Python, Soldering, Electrical Wiring, ASME Y.14 Technical Drawings, Visual Studio Code, Arduino IDE libraries
- **Soft Skills:** Project Management, Adaptability, Communication, Leadership, Awareness, Time Management