

DIEGO CASTILLO HERRERA

Aerospace Engineer | CAD | Aerodynamics | Manufacturing

Aerospace Engineering undergraduate with hands-on motorsport experience through Bristol Racing, alongside projects in aerodynamic testing, vehicle performance and manufacturing. Skilled in CAD, MATLAB, Python, XFOIL and engineering analysis, with a strong interest in Formula 1 aerodynamics and vehicle performance.



EDUCATION

BEng Aerospace Engineering

2024 – Present

University of Bristol

- Relevant modules: Aerodynamics, Structures & Materials, Thermodynamics, Mechanics.
 - Practical projects include UAV manufacture, wind-tunnel testing, Control systems, and engineering computing.
- On track to achieve a **First-Class Honours** degree.

International Baccalaureate

2022 – 2024

Lincoln School Costa Rica

- Graduated with a score of 40: Including a 7 in Physics HL, 7 in Math AA HL, and 7 in Chemistry SL

EXPERIENCE

Bristol Racing – Greenpower Championship

Sept 2024 – Present

Technical Lead | Composites Team | Aeroshell Specialist

- Created designs for aerodynamic front and rear wheel covers in CAD, collaborating with aero and mechanical teams to integrate performance, manufacturing and regulatory requirements.
- Manufactured carbon-fibre components, including an enclosure and nose cone, gaining hands-on experience in composite layup and part production.
- Led technical training for 100+ new members, teaching CAD, electronics and vehicle design/assembly for the RC programme.
- Coordinated technical development across multidisciplinary teams, supporting design, manufacture and integration of vehicle components.

AVDASI – UAV Manufacture

Sept 2025 – May 2026

Wing Structure and Design Specialist

- Designed and analysed the main wing structure of a UAV, which survived 1.8x the required ultimate load at 90% of maximum design weight during structural testing.
- Developed CAD models and manufacturing solutions for the wing structure, translating the design into manufacturable components.
- Directed the manufacture and testing of the wing, evaluating structural performance against design requirements and identifying areas for improvement.

S-RC Cup

Jan 2025 – Present

Engineering Lead | Design Engineering Technical Director | Founding Member

- Led a 14-person multidisciplinary engineering team delivering the UK Motorsport Series and STEM challenge, with 10+ teams from colleges across the UK competing in the championship.
- Identified recurring failure points in RC cars and designed 4 replacement and spare components, improving team reliability and providing critical parts throughout the competition.
- Redesigned track barriers, increasing impact resistance while reducing total costs.
- Provided on-track engineering support during race days, diagnosing and resolving vehicle issues for students in a fast-paced competition environment.

PrecisionDigital CNC

May 2025 – Sept 2025

Engineering Assistant | Automotive Mechanic

- Modeled, programmed and fabricated components using CNC machining, CAD and assembly processes.
- Manufactured large injection mould, F1 in Schools model car, and replacement components for cars.
- Disassembled and reassembled a car engine and a manual transmission system, restoring full functionality to the vehicle. Resolved three front suspension faults and diagnosed and repaired two engines.

PROJECTS

- Wind Tunnel Personal Project
 - Created designs, and manufactured a low-cost wind tunnel to experimentally compare the aerodynamic performance of scaled RC cars, applying aerodynamic testing and experimental methods.
- Motorsport Telemetry and Vehicle-performance Tool
 - Developed a MATLAB-based telemetry analysis tool to analyse speed, braking, throttle and cornering behaviour, identifying lap-time losses.
- Engineering Without Borders – Community Award
 - Designed a large-scale condensation catcher to provide access to clean water, receiving the popular vote award in the engineering design challenge.

LEADERSHIP

- ColibríA – AI & Coding Education Volunteer | July 2026
 - Planned and delivered AI and introductory coding lessons to teenagers in underserved communities in Costa Rica, developing accessible material for students with limited technical experience.
 - Guided students in developing community-focused solutions, applying coding and AI concepts to identify and address local challenges.
- NSLC Aerospace Engineering – Johns Hopkins University | Summer 2023
 - Collaborated with 20 students during the National Student Leadership Conference for Aerospace Engineering to devise innovative solutions addressing 5 different real-world aerospace challenges.

SKILLS

- **CAD & Design:** SolidWorks, Fusion 360, Autodesk Inventor; surface modelling, component design, design for manufacture
- **Analysis & Programming:** MATLAB, Python, XFOIL, Abaqus/FEA; numerical modelling, engineering computation, data analysis, computational fluid dynamics
- **Aerodynamics & Testing:** Aerodynamic design, aerofoil analysis, wind-tunnel testing, experimental methods, aerodynamic performance evaluation
- **Manufacturing:** CNC machining, composite manufacturing, carbon-fibre/fibreglass layup, mould manufacture, vacuum bagging, prototype development
- **Engineering:** Structural analysis, composite structural design, structural testing, technical reporting, engineering documentation
- **Certifications:** MATLAB Onramp (2025), Simulink Onramp (2026), Simscape Battery Onramp (2026)
- **Languages:** Spanish (Native), English (C1), French (Basic)

INTERESTS

Track and Field – Costa Rica

- Competed at national level for 8 years
 - Placed 2nd at the National Championship
- High School Varsity Team Captain

Cars and Motorsports

- Deeply passionate about motorsports, cars, and the engineering aspects of both.

Music

- Self-taught in Guitar
- Played Violin for 10 years
 - First chair, String Orchestra
- Enjoy producing music in spare time