Davi Ruschel

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EDUCATION

University of Bath *2022-2026*

MEng (Hons) Mechanical Engineering - 1st Class Predicted (Average: **74.1%**)

Modules of Interest:

Heat Transfer (**79%**), Control Systems (**80%**), Material Selection in Engineering Design (**84%**)
Mathematics 1&2 (**77%, 81%**), Mechanical Vibration & Noise (**78%**)

Compass International School Doha, Qatar *2020-2022*

International Baccalaureate (IB) Diploma - Final Grade: **41/45 Points**

Higher Level: Physics (**7**), Mathematics (**6**), Business Management (**7**)
Standard Level: Chemistry (**6**), Spanish (**7**), English (**6**)

Compass International School Doha, Qatar *2018-2020*

iGCSE – Final Grades: **A*AAAAB887**

WORK EXPERIENCE

Race Strategist & Vehicle Performance Engineer, *Green Bath Racing* *Bath, 2024-Current*

- Led the race strategy execution at the 2025 Shell Eco-Marathon, making real-time, data-driven decisions on acceleration timing and pace under pressure to balance risk and maximise efficiency.
- Analysed telemetry, simulation outputs, statistics, and driver feedback to identify energy usage trends and iteratively refine strategy across successive runs.
- Collaborated with the powertrain team to convert data insights into motor control and setup changes, optimising vehicle behaviour for evolving performance demands.
- Contributed to Green Bath Racing's best-ever result - 4th place in Europe & North Africa (out of 32 teams) and a new UK national energy efficiency record in the team's only second year at this category.

Design Engineer & Mechanical Assembly, Zikeli Mechanical Industry Summer 2025

- Contributed to the development of a new roll-forming machine by defining material deformation stages, calculating forces, and determining the number of passes required.
- Assembled high-precision machinery including roll-forming lines, tube-forming lines, gearboxes, and hydraulic subsystems, working directly from technical drawings.
- Diagnosed root cause of recurring saw failures by analysing telemetry data from a tube-forming machine in Python, leading to the identification of a control misalignment.

Event Manager & Sales Representative, *Official Events* *Bath, 2023-Current*

- Co-founded a brand-new weekly event from concept to execution, taking full ownership of brand image, social media strategy, and digital content to drive awareness and engagement.
- Scaled the event to regular attendances of 400 people, generating over £16,000/month in revenue through strategic promotion, stakeholder coordination, and financial management.

ENGINEERING PROJECTS

Race Strategy Simulation & Telemetry System *University/Competition Team Project, 2025*

- Designed and implemented an innovative Python-based race strategy simulator to optimize energy deployment, integrating cornering safety constraints and vehicle dynamics.
- Engineered a real-time telemetry system using ESP32 and sensors to provide live driver feedback, enable data logging, and support post-run performance analysis.
- Enabled data-driven strategy decisions during the 2025 Shell Eco-Marathon, contributing to Green Bath Racing's 4th place finish in Europe and North Africa, while setting a new UK efficiency record.

Vehicle Performance Test Rig (Dynamometer) *Personal/Competition Team Project, 2025*

- Currently designing a modular and portable chassis dynamometer to replicate real-world race conditions by simulating track-specific loads from cornering forces, elevation, and velocity using a PID-Control.
- Integrating a custom telemetry system for real-time data capture and post-run analysis using an Arduino and sensors to evaluate energy usage models and powertrain calibration.
- Developed to enhance vehicle testing, and pre-competition strategy optimization and training for Green Bath Racing.

Machine Design for Nuclear Rod Cell Assembly *University Project, 2023*

- Collaborated as a team to design a machine capable of assembling control rod modules for nuclear reactors. Participated in the entire design process, from initial conceptual drawings and identification of morphological functions to the creation and assembly of CAD models.
- Gained hands-on experience with the complete engineering design cycle, allowing me to develop teamwork and communication skills through effective collaboration and design discussions.

SKILLS

Programming & Data Analysis: Python (NumPy, Pandas, Matplotlib, Seaborn), MATLAB/Simulink. Conducted data-analysis on vehicle telemetry and Formula 1 telemetry as a side-project.

Simulation & Engineering Tools: Vehicle dynamics modelling, lap simulation, telemetry systems, control systems, FEA, CFD (basic), system modelling

Software: Autodesk Inventor, AutoCAD, Microsoft Office, Excel (Advanced), strong computer skills

HOBBIES & INTEREST

Tennis: Practiced since the age of 4, and having competed in regional and state tournaments in southern Brazil. It has taught me valuable lessons in discipline, perseverance, and strategic thinking that I apply in my personal life.

Piano: Recently started learning the piano, taking on the challenge of learning an instrument, although I am enjoying the process.

Karting: Developed an early interest for motorsport through casual go-karting at age 5. Nowadays, I enjoy racing with friends in a friendly-competitive manner.

LANGUAGES

Portuguese – Native **English –** Bilingual Proficiency **Spanish –** Professional Working Proficiency