

Mohamed Rammal



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About me:

Final year MEng Mechanical Engineering student at UCL, highly interested and invested in the robotics and automotive fields. Valuable experience in **Formula Student UK** and **Shell Eco-Marathon**. Wide software proficiency including various CAD, CFD, simulation packages, and programming languages. Skilled in mechanical and electrical design. Brings passion and technical knowledge into work and values teamwork and growth above all.

Education:

MEng Mechanical Engineering at University College London, UCL: Sep 2020 – Jun 2024

- On track for a First-Class Honours with average of 73% in the first 3 years.
- Relevant modules: Advanced Thermodynamics & Fluid Mechanics, Control & Robotics, Machine Learning & Neural Computing, Manufacturing & Design, Elasticity & Plasticity, Financial Aspects of Project Engineering.
- 3rd Year project: Enhancing physiotherapeutic recovery by designing and building an exercise assisting device.

Grand Lycée Franco-Libanais, Beirut: Sep 2015 – Jun 2020

- French Baccalaureate (Scientific). Final average of 19.08/20. IB in Arabic, History and Geography.
- Designed and built a home robot assistant for the elderly during Final Year Project.

Technical Skills:

- Proficient in CAD modelling, static simulations, and CAM machining.
- Comfortable with MATLAB Simulink, Python, Arduino programming, CAN-BUS systems, and PCB design.
- Knowledgeable in waterjet cutting (WAZER), 2-axis machining, router, and lathe manufacturing.

Experience:

Research and Development Lead at UCL Formula Student: Aug 2023- Present

- Leading a team of 6 to design UCL's first Formula Student Electric powertrain.
- Designing Low and High Voltage PCBs and wiring harnesses and assembling a HV battery pack.
- Using CAN-BUS for fast and effective communication between components.

Head of Simulation and Performance & Design Engineer at UCL Formula Student: May 2022 – Jul 2023

- Simulated the UCL Formula Student car's behaviour in different environments and setups using IPG Carmaker.
- Designed and assembled the wishbones and suspension systems for the car to adopt decoupled roll-heave dampers front and rear.

Chief of Powertrain Design & Control-Electronics at UCL Eco-Marathon: Oct 2021 – Mar 2023

- Designed and manufactured the vehicle's loom. Ensured electrical components receive efficient power supply.
- Provided the driver with live telemetry readings, a control dashboard, and custom electronic accessories.
- Used a CAN-BUS system to efficiently transfer data between components and the dashboard.
- Designed and assembled customized PCB boards to improve packaging and efficiency.
- Total powertrain efficiency up to 93%. Car mileage simulated to around 3000 km/m³ of Hydrogen Fuel.

Head of Mechanical Design of FIRST Tech Challenge (FTC) Robotics team: Sep 2015 – May 2019

- Led the design and build of robots completing tasks like collecting and scoring balls in various targets.
- Modelled the different components of our robots and simulated their interactions and behaviour within the system and with the environment. Used mecanum wheels for smooth manoeuvrability and control.

Volunteering:

- Mentor with UCL Racing, providing junior members with technical support using machines and software.
- Professional-Class Engineering judge for F1 in Schools North London Regional Finals.
- Organized extracurricular events like socials, career talks and engineering competitions as Vice-President of UCL Mechanical Engineering Society. Partnered with Autodesk for 2 mechatrons with 90+ participants each.

Achievements:

- 2nd place in Sprint Race and 21st overall in Formula Student UK 2022.
- Multiple awards including "Best Innovative Idea" in UCL Accessibility Hackathons in 2020 and 2021.
- 4x Best Mechanical Design, 4x National Champions and 1x Judges' Award at FTC World Championship.

Hobbies and Interests:

- Proficient in English, French and Arabic. Learning Spanish.
- Classical guitar player since 2010 with 3 personal compositions.
- 1st Dan Kyokushin Karate fighter, competed on international level in Japan.