

# Mohamed Rammal

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## Education:

### University College London UCL: Meng Mechanical Engineering

Sep 2020 – Jun 2024

- On track for a First-Class Honours, with current average of 85.89% in Year 1.
- Relevant modules: Thermodynamics and Fluid Mechanics, Engineering Materials, Manufacturing and Design, Control and Instrumentation, Mechanics of Solids and Structures.

### Grand Lycée Franco-Libanais Beirut:

Sep 2015 – Jun 2020

- French Baccalaureate (Scientific). OIB in History & Geography and Arabic. Final average of 19.08/20

## Work Experience:

### UCL MechSpace (Mechanical Engineering Workshops) Mentor:

Nov 2021 – Present

- Provide other students with the necessary help using the complex machinery present in the workshops.

### Mechanical Engineering Society Sponsorship Executive:

Oct 2020 - Present

- Manage sponsorships and partnerships between the society and relevant external companies.
- Invite companies to collaborate with the society in events providing lists of tiers and benefits.

### UCL Robotics Society Co-Founder, Treasurer and Design Teaching Lead:

Oct 2021 - Present

- Prepare tutorials for beginners and intermediate students to learn the basics of CAD on Autodesk Fusion360.
- Manage the society's finances for funding events and external competitions (e.g. Eurobots).

### Project Impactive CAD mentor:

Feb 2021

- Prepared and delivered an interactive course to high school students on the basics of Fusion360.

### Warde Steels and Metals Workshop Assistant:

Jul 2019

- Renovated an old firefighting system in a hydroelectric power plant in Lebanon, through diagnosing electrical and mechanical defects, planning and applying fixes, and iteratively testing the system.

## Competitions | Awards:

### UCL Racing Shell Eco-Marathon CAD and PU development engineer:

Nov 2021 – Present

- Design, build and test drive an ultra-energy-efficient car running on a hydrogen fuel cell.
- Perform CFD analysis to determine resistive aerodynamic forces to adjust the model.
- Ensure the motor receives sufficient power to run at best efficiency.

### IMechE design Challenge:

Dec 2020 - Mar 2021

- Designed a repeatable vehicle that can autonomously drive forward, hit a wall then go back to the exact starting location all while measuring the distance travelled mechanically. No processors were used.
- Used Fusion360 topology optimization and generative design to model lightweight and rigid supports.

### UCL Accessibility Hackathons:

Sep 2020 and Sep 2021

- Won "Best Innovative Idea" and "Creative Presentation" awards for designing a new muscle-aid device for patients suffering from neuromuscular disorders.
- Won "Most Impactful Idea" for designing a mobile app to help Down Syndrome patients communicate with their caretakers. Worked on an Interactive UI which translated the individual's needs through pictures.

### FIRST Tech Challenge FTC <sup>(1)</sup> Mechanical Lead:

Sep 2015 – April 2019 (4 competition seasons)

- Team of three members, later expanded to eight, working at home with our own resources, financing our seasons through assembling and selling 3D printers locally. Earned 8 national awards (including 2<sup>nd</sup> and 1<sup>st</sup> place) and 1 international award. National representatives in the world championship in the US for 4 seasons.
- Acquired skills in finding innovative solutions, project management, business plan, communication, leadership, Java programming (Android Studio), design mechanical models (Fusion360), and manufacturing.
- Used Fusion 360 to design and model the different components of our robots, and simulate their interactions and behaviour within the system as well as with the external environment.

### AUB MSFEA Entrepreneurship Program: (3<sup>rd</sup> place)

Jul 2018 – Aug 2018

- Attended a series of IoT workshops, events and talks from entrepreneurs and environmentalists.
- Designed and built a pollution detection system for carbon-emitting power-plants using Raspberry Pi 3 and Python, with threshold evaluation and push-notifications to alert the administrators to change filters.

## Technical Skills and Personal Interests:

- Proficient in Fusion 360 modelling, simulating and machining. Comfortable using ANSYS. Learning CATIA.
- Comfortable in Java and Python. Ongoing courses in ML, AI and C++.
- (Shin)Kyokushin Karate, since 2006. Black belt, competed on international level.
- Proficient in Arabic, French, and English. Learning Spanish.
- Classical guitar player since 2010 with three personal compositions.

(1): FIRST Tech Challenge: <https://www.firstinspires.org/robotics/ftc>