

# Riccardo El Hassanin

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## EDUCATION

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### Imperial College London

*MEng Electrical and Electronic Engineering*

**London, UK**

2019 – 2023

- On track for First-Class Honours | Current Classification 2:1
- Relevant Modules: Mathematics, Machine Learning, Deep Learning, Artificial Intelligence, Advanced Signal Processing, Embedded Systems, Analogue and Digital Circuits, Communication Systems

### Gems World Academy Dubai

*International Baccalaureate (IB) Diploma*

**Dubai, UAE**

2015 – 2019

- Total Score: 43/45 | Higher Level Subjects: Mathematics (7/7), Physics (7/7), Business Management (7/7).
- Salutatorian Award (2019) and Honours Roll Awards (2015-2019) for outstanding academic performances.

## RELEVANT PROJECTS

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### Speaker Recognition Device

*ARM Consultancy Project*

May 2022 – July 2022

- Led a team of 6 to build an open-source software and data processing model to perform local speaker recognition in near real-time.
- Developed an algorithm in Python to extract the acoustic features information from spectrograms of the input voices using an advanced convolutional neural network and match the speaker to a person in the database.

### NotiSound- Smart Sound Recognition Device

*Embedded Systems Project*

January 2022 – March 2022

- Worked in a team of 4 to develop a smart sound recognition device that classifies doorbell and fire alarm noises in a house environment and sends notification to the end user through an app when the sounds are detected.
- Developed a deeper understanding of deep learning by employing a convolutional neural network to constantly classify sounds from spectrograms of the input signals.

### Mars Rover Project

*Second Year Electronics Project*

May 2021 – June 2021

- Worked in a team of 6 to design and build of an autonomous Mars Rover prototype using Arduino, able to work remotely without supervision, avoid obstacles in its vicinity and able to map and store data of its travelled path.

## WORK EXPERIENCE

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### Undergraduate Research Opportunity Program (UROP)

8 weeks Summer 2021

- Undertook a research experience, supervised by Professor Tom Pike on NASA's Mars InSight Mission.
- Enhanced analytical skills by processing data returned from InSight to disentangle the seismic signals from Mars' background interferences and obtain insights on potential patterns by performing principal component regressions.
- Strengthened coding skills by creating a UTC-Mars time-converter for the purpose of mapping the processed data.

### Tutoring IB students: HL Math and HL Physics

Aug. 2020 – Dec. 2020

- Acquired a strong sense of organization and time-management skills by successfully balancing teaching and multiple university deadlines.
- Improved verbal communication skills to convey mathematical knowledge to younger minds.

## TECHNICAL SKILLS

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- Proficient in Microsoft Office applications.
- Experienced in Python (NumPy, Pandas, Keras, TensorFlow), C++, Arduino, Prolog, MATLAB, Simulink, Verilog HDL, Quartus Prime, Linux, CAD design.
- Hardware skills – Raspberry Pi, FPGA, integrated analogue circuits design, Soldering, 3D and Laser Printing
- Languages – Italian: native | English: fluent | Spanish: intermediate level.