# Maurice Rahme

Curriculum Vitae
Chicago, Illinois, USA
mrahme97@hotmail.com
224-244-1684


## Education

- **Northwestern University** — **Evanston, IL**
  *Master of Science in Robotics* — **Sep. 2019 - Exp. Dec 2020**
  - No GPA yet.
- **The University of Edinburgh** — **Edinburgh, UK**
  *Bachelor of Engineering (Honors) in Electrical & Mechanical Engineering* — **Sep. 2015 - Jul. 2019**
  - First Class (4.0 GPA)

## Work Experience

- **ASEA Brown Boveri (ABB)** — **Dubai, UAE**
  *Engineering Intern - Medium/Low Voltage and Building Automation* — **May. 2018 - Aug. 2018**
  - Co-designed the GRMS layout for the Zabeel One project worth 500,000$.
  - Coded an automated project proposal sheet using VBA. Est. 1-2 hours saved per proposal.
  - Installed switch-gear and building automation products.
  - **Extension to August:** developed a building automation design tool using VBA for ABB's future® linear product line. It generates a bill of quotation along with local contact and legal details and a per-configuration appendix in PDF format. Reported time savings: 5 hours per client order. 2 hours per revision.
- **Jaguar Land Rover (JLR)** — **Gaydon, UK**
  *Engineering Intern - Body Control Module (BCM)* — **Jun. 2017 - Sep. 2017**
  - Received 'Outstanding' grade on performance review.
  - Coded a STATEFLOW model for blinker light control on a new car line.
  - Produced and tested BCM code for the 2017 Frankfurt Autoshow in STATEFLOW.
  - Led and took minutes for 10-person open issue list meetings and implemented a task allocation and follow-up system to boost work output.
  - Programmed and manufactured a digital strain gauge and line and wall following RC-car module to supplement challenges in JLR's '4x4 in Schools' competition.

## Student Engineering Experience

- **Project InnSpace, The University of Edinburgh** — **Edinburgh, UK**
  *Executive Secretary* — **May. 2018 - May. 2019**
  - Conducted administration, communications, website maintenance, and event organization (teaching workshops, laboratory inductions, project exhibitions) for a 30-person society.
  - Created and maintained an online booking system in Javascript with file drop-off and process notifications for InnSpace's 3D printers.

- **Edinburgh University Formula Student (EUFS)** **Edinburgh, UK**
  *Aerodynamics (2016-2017) and Suspension (2017-2018) Team Manager* **Jul. 2016 - Jul. 2018**
  - Managed the design and manufacturing of suspension and aerodynamics components for teams of 8 people in each post.
  - Taught and assisted team members with CAD design in SOLIDWORKS.
  - Computed a SIMULINK model to calculate braking and cornering forces on wheels.
  - Constructed a MATLAB design tool for Parallel and Ackermann steering configurations.
  - Reviewed design reports and raised £9,000 in unmatched sponsorship (50% of budget in both years).
- **Edinburgh University Hyperloop Team (HypED)** **Edinburgh, UK**
  *Dynamics Engineer* **Sep. 2016 - Jun. 2017**
  - Researched halbach wheels for pod stability, thrust and braking.
  - Drafted a solenoid-actuated suspension design for pod stability.
  - Taught fibreglass manufacturing and wrote design reports.

## Research Experience

- **BEng Project (Thesis) - Supervised by Dr. Aristides Kiprakis** **The University of Edinburgh**
  *Pointing & Tracking Device for Bidirectional Laser Communication* **Sep. 2018 - May. 2019**
  - Designed and built two laser transceivers to command a submerged rover. Inverse Kinematics based motor actuation maintains system uplink in a half-spherical FOV.
  - Programmed pointing and tracking algorithm based on elliptical template matching via camera input processed in LabVIEW with occlusion-resistance using Kalman-filtering.
  - Awarded prize: IMechE Best BEng Project for 2019.
- **Final Year Group Project** **The University of Edinburgh**
  *Electromagnetic Levitation in Multiple Dimensions* **Sep. 2018 - Nov. 2018**
  - Created a stepwise control strategy to decouple a nonlinear two-solenoid MIMO system, then implemented cascaded compensators on decoupled paths for 2D levitation control.
- **Sustainable Energy Group Project** **The University of Edinburgh**
  *Portable 15W Wind Turbine to Charge two Mobile Phones* **Jan. 2018 - Apr. 2018**
  - Designed and manufactured an axial-flux-permanent-magnet generator and control system.
  - An Arduino reads generator revolution frequency as measured by a PCB-mounted schmitt trigger on one phase to monitor and control speed. Performance data is shown on an I2C OLED screen.

## Awards

IMechE Best BEng Project (UofE) . . . . . 2019
The Edinburgh Award (extracurricular achievement - UofE) . . . . . 2018
The Spirit of Formula Student Award (FSUK) . . . . . 2016

## Skills

- *C/Python*
- *MATLAB*
- *SimuLink/StateFlow*
- *LabVIEW/OpenCV*
- *LaTeX*
- *SolidWorks/SolidEdge*
- *Altium*
- *Arduino/RaspberryPI*
- *VBA/Javascript*

## Languages

- *English – Fluent*
- *French – Native*
- *Arabic – Native*