



Nael Jaber

Mechatronics Engineer



Experience

2018 -
present

Graduate Research Assistant

American University of Beirut

Conducted research in the computer vision field, using advanced machine learning techniques for image processing and later applying it in visual servoing applications. My research application mainly focuses on object detection, relying on images from different modalities to train a multi-channelled CNN implemented using Pytorch and TensorFlow. The developed skills are not limited to the computer vision field where visual servoing requires a good understanding and knowledge in robot localization, motion planning, and sensor fusion. The detection system was employed on a quadrotor, and it required the usage of different microcontrollers such as Arduino and Raspberry Pi.

10/2018 -
present

Robotics and Programming Instructor

International College - Beirut

Advisor and instructor of the Programming and the Robotics Clubs. These clubs include only high school students where they learn the basics of programming, build robots, and participate in competitions.

2014 -
2018

Robotics Instructor

Student Technology Club - Rafik Hariri University

Student Technology Club supports STEM education by engaging school students into technology based programs by participating in several robotics competitions. So the gained experience was built on coaching high school teams for participating in robotics competitions of their division, winning several awards with these teams in several competitions was my indication to success. Furthermore, delivering educational workshops to university students was part of the job, along with attending and participating in scientific and robotics exhibitions.



Education

2000 -
2014

Rabih School, Qabreshmoun - Lebanon

Lebanese Baccalaureate Certificate

2014 -
2018

Rafik Hariri University, Mechref - Lebanon

Bachelor of Engineering in Mechatronics

2018 -
present

American University of Beirut (AUB)

Masters in Mechanical Engineering - Mechatronics track



Personal Info

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Phone

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E-mail

nael.a.jaber@hotmail.com

Date of birth

16.08.1996



Professional Skills

C++



Python



ROS



OpenCV



TensorFlow



(Computer Vision - Machine Learning)

PyTorch



(Computer Vision - Machine Learning)

Ladder Logic (PLC)





Additional Activities

2017

- **ASME Member**



Personal Skills

- Take Responsibilities
- Negotiation
- Work Under Pressure
- Teamwork
- Time Managment



Honors and Awards

2015

- **VEX U Robotics Competition - Excellence Award**
The VEX Robotics Competition is the largest robotics competition globally and the leading for university students in Lebanon. An exciting engineering challenge is presented each year where students have to build innovative robots to win the challenge

2016

- **Engineering Design Challenge (EDC 2.0)**
The competition had several challenges to do by building an autonomous boat such as racing and avoiding obstacles placed in water field

2016

- **Vision Centric Challenge (VCC)**
A university challenge based on image recognition and processing. A robot should detect a pattern of a number or an alphabetical letter using a camera.
- **Jury Member, WRO Robotics Competition**



Courses

- Control System Design
- Robotics
- Computer Vision
- Introduction to Machine Learning
- System Analysis and Design
- Electric Machines
- Solar Energy
- Programmable Logic Controller - PLC



Publications

- 08/2018 ● Windmill Climbing Robot - Conference: 2018 International Conference on Computer and Applications (ICCA)
- 01/2020 ● Detection of Processionary Moth Nests in Pine TreesUsing Multi-Stream Convolutional Neural Networks (Still in Review Process)



Software

AutoCad



SolidWorks



MATLAB



Multisim (Circuit Designer)



Microsoft Word



Microsoft PowerPoint



Microsoft Excel



Languages

Arabic (Native)



English (Speaking and Writing)

