



EDUCATION

BE Mechanical Engineering | Notre Dame University, Lebanon

HIGHEST DISTINCTION, 3.86 GPA | 2015 – *EXPECTED GRADUATION DECEMBER 2020*

Final year project: Electric Heavy Duty Powertrain

Transforming a diesel heavy duty truck into an electric one. The design includes the study and selection of electric motors, gearbox, batteries, battery management system, cooling system, braking systems, control system, power electronics, and accessories, as well as the BOQ and implementation plan, while conforming to engineering standards and realistic constraints.

Baccalaureate Diploma | Lebanese National Higher Conservatory of Music

HIGH DISTINCTION, FLUTE RECORDER & PIANO | 2003 – PRESENT

Lebanese Baccalaureate in General Science | Notre Dame de Louaize, Lebanon

DISTINCTION | 2000 – 2015



EXPERIENCE

Glass Processing, Design and Development

Horizontal Tempering Glass, Lebanon

JANUARY 2020 – PRESENT

Product development process for glass tempering: Design output, calculation and analysis – Design review, verification and validation – Corrective and preventive action – Control of non-conforming products.

Innovation and Industry 4.0 Development

BMW Group, Munich

AUGUST 2019 – DECEMBER 2019

Logistics Robotics: Production of generic solutions for the present problems - Technical implementation of the requirements - Proof of functionality in testing - Documentation and tracking of progress - Integration into existing solution – All code written in Python in a ROS environment.

Worked on PlaceBot, a mobile robot that detects, grips, and places boxes for the supply of the plant's assembly line: Achieved a safe operating robot that can intelligently handle human safety and process errors – Reduced process time from 47 sec to 32 sec – Developed a method to save shelves and ArUco markers position within a localization map using machine learning for the detection – Debugged and improved many already existing features.

Human Joints Impact Measurement and Optimization Research Assistant

Notre Dame University, Lebanon

MARCH 2019 – AUGUST 2019

Modeling the forces in human joints due to impact: Experimental procedure design and management - Data acquisition and analysis

Worked on the Vicon motion system model for the markers position – Handled the confidentiality and consent statements – Designed and conducted the experiment using OptiTrack motion capture system and AMTI NetForce – Collected data through .csv files and used the LSE technique for curve fitting using Matlab – Completed data processing through Matlab.

Convolutional Neural Network Research Intern

École des Mines ParisTech and Notre Dame University

JULY 2018 – AUGUST 2018

Feasibility study of the convolutional neural network to predict external fluid flow: The use of Convolutional Neural Networks and Fluid Flow Simulation to establish a real time estimation tool of external fluid flow in the laminar region

Studied and created a way to detect edge sharpness in 2D pictures and to determine the surrounding fluid velocity and pressure, using Machine Learning based on ANSYS software simulations.

Construction Design

Construction Engineering Office, Lebanon

JULY 2017 – AUGUST 2017

Water supply and sanitary drainage design and drawing, including pipe size and routing
Completed full CAD drawings for 2 residence houses using AutoCAD

Quality Control and Production

Advanced Plastic Industries, Lebanon

JUNE 2017

Monitoring the quality of material and products by laboratory testing as per Bureau Veritas – Pipe production by extrusion – Fittings production by injection – Design and making of molds

Private Tutor, Math and Physics | MonAgenda after-school, Lebanon

2014 – 2016

Piano Teacher | Freelance

2016 – PRESENT

Teaching and monitoring the progress of students

Music Teacher “Mélodie” certified | Mini-Conservatoire Amadeus, Lebanon

SEPTEMBER 2013 – PRESENT

Class management – Feedback communication – Providing training to new teachers



TRAININGS AND WORKSHOPS

Virtual Innovation Exchange for Global Health

Engineering World Health, United States

JUNE - JULY 2020

Conceptualize designs for low-resource health care providers in a cross cultural experience:
Designed an efficient family size water purification system suitable for low-resource, low-infrastructure communities. The design doesn't require electricity nor chemicals and is optimized to be low cost, accessible, and easy to use, solely made from natural resources available in the selected regions.

Digital Hub Hackathon | Oerlikon, Munich

NOVEMBER 2019

Designing digital tools for the industrial world: Created and designed a smart solution to automatically detect and trace bobbin loading on a cart in a warehouse, using IOT

VEX U Robotics Competition | Lebanon

MARCH 2018

Designed, built, programmed, and drove a manual and autonomous robot to stack cones on goals, score mobile goals in zones, and park

LEGO Robotics Club | Notre Dame de Louaize, Lebanon

2010 - 2011



SKILLS

- **Computer Skills:**
ROS, Python, Arduino, C++, Raspberry Pi, ANSYS, MATLAB, LATEX, AutoCAD, Revit, SolidWorks, PLC, LEGO Mindstorms EV3, REFPROP, OptiTrack motion capture system, AMTI NetForce, G-code (CNC)
- **Languages:**
English – Fluent
French – Fluent
Arabic – Fluent
German - Beginner



ACTIVITIES

Pianist at Sancta Maria Choir - Committee member of ASHRAE NDU - Committee member of NDU MUN - Member of ASME NDU - YES Academy Piano Masterclass - Club d'athlétisme NDL - Member of several musical bands - Community Service, SMILE together - Anta Akhi - NDU children choir