

# Nour El-Hoda Khalifeh

Mechanical Engineer | Artificial Intelligence, Software Development, and Robotics Enthusiast

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Beirut, Lebanon 📍

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## EDUCATION

### BE in Mechanical Engineering American University of Beirut

01/2016 – 05/2020

GPA: 4.0 / 4.0 [90.62 / 100]

#### Courses

- Robotics
- Optimization and Non-Linear Problems
- Adaptive Control
- System Identification

### Minor in Applied Mathematics American University of Beirut

01/2016 – 05/2020

## WORK EXPERIENCE

### Robotics and Software Engineering Intern BMW Group Munich

06/2019 – 12/2019

Munich, Germany

Robotics and Logistics Department, Project Innovation and Industry 4.0

#### Achievements/Tasks

- Motion Planning and Control using State Machine for a logistics robot in ROS (Python)
- Interactive Behavior Design with Computer Vision, User Interface, Safety Concept, and Error Handling
- Generic State Machine Development which allows using the same code base to perform very different robot behaviors
- System Implementation in a real plant environment and adding new features following the process needs and set by the plant
- Project management through agile software development using SCRUM method

### Work Study Student American University of Beirut

09/2018 – 05/2019

Beirut, Lebanon

Work Study at the Mechanical Engineering Department/ Faculty of Engineering and Architecture

#### Achievements/Tasks

- Admission database and application processing, setting proctoring shifts and editing annual departmental reports

### Mechanical Engineering Design Intern EM-TECH

05/2018 – 08/2018

Beirut, Lebanon

Firm specialized in the design, management and execution of Mechanical, Electrical & Plumbing (MEP) works

#### Achievements/Tasks

- HVAC, Plumbing, Firefighting Shop-drawings Design of Les Deux Mamelles Mak Hotel & Mix Use Project in Dakar, Senegal, and Halat Villa in Beirut using AutoCAD

## ORGANIZATIONS

American Society of Mechanical Engineers - ASME

AUB Robotics Club

Lebanese Aerospace and Automotive Society

## TECHNICAL SKILLS

ROS

Python

Object Oriented Programming

Git

State Machine Development

Mathematica

C

C++

JAVA

HTML

SQL

CSS

MATLAB

Simulink

NI LABVIEW

NI MyRIO

Solidworks

CreoParametric

ANSYS

AutoCAD

CES Pack

## ACADEMIC PROJECTS

### Final Year Project (10/2018 – 05/2019)

- Designed at American University of Beirut
- Implemented in BMW Group Munich
- Assistive De-Palletizing Robotic System whose aim is to de-strap incoming pallets on conveyor belts at BMW Group Plants
- Open-loop de-strapping approach that targets to detect, cut, and dispose of the straps of pallets with low tech, low maintenance, and low overall implementation costs

### Course Projects (01/2016 – 05/2020)

- Motion Planning of KUKA YouBot Arm in ROS
- Optimization of Fin Design for Hybrid Air-Water Cooling System
- Finite Element Analysis & Design of Super-Mileage Gear System
- Design and Manufacturing a Retractable Wing using SMAs
- Water Pumping Station controlled using NI Labview
- Company Portfolio Convex Optimization
- Temperature Control of Air Flow inside a Channel using NI MyRIO
- Fitness Machine Design Assessment
- Sumo Fighter Lego Robot Design

## HONOR AWARDS

### Dean's Honor List (01/2016 – 05/2020)

Awarded 8 times, for each Semester / Maroun Semaan Faculty of Engineering and Architecture, American University of Beirut

### Dean's Award for Creative Achievements in Mechanical Engineering (05/2019)

Most Creative Final Year Project - IDEAS 2019 Conference, American University of Beirut

EU Scholarship for outstanding students (01/2016 – 05/2020)

## LANGUAGES

English

Full Professional Proficiency

Arabic

Native or Bilingual Proficiency

German

Limited Working Proficiency

Turkish

Elementary Proficiency

## SOFT SKILLS

Critical Thinking

Analytical Reasoning

Design Sense

Public Speaking and Presenting

Team Building and Motivation

Time Management