# Roy Khalil

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**Address:** Sed El-Bauchrieh, Beirut, Lebanon

## Education

**BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING | ** SEP 2015 - JUL 2019

*American University of Beirut, Lebanon*

## Experience

**Intern Mechanical Design Engineer | ** JUN 2018 - JUL 2018

*Nesma & Partners: Headquarters, Khobar, Saudi Arabia*

➢ Designed firefighting systems and HVAC systems with energy recovery
➢ Designed piping and ducting floor layouts

**Intern Site Piping Engineer | ** JUL 2018 - AUG 2018

*Nesma & Partners: OMPP-Haradh, Haradh, Saudi Arabia*

➢ Worked on the fabrication, coating, and inspection of large pipes
➢ Oversaw and supervised underground piping installations in trenches, coating, QC tests, and backfilling

**Intern Site Engineer | ** AUG 2018 - SEP 2018

*Nesma & Partners: SANG hospital-Riyadh, Riyadh, Saudi Arabia*

➢ Supervised ducting, chilled water, steam, and firefighting installation
➢ Worked with the preparations for the building management system (BMS)

## Volunteering

**Fire Fighter Volunteer | ** JUN 2014 - APR 2015

*Lebanese Civil Defense, Rachaya al foukhar, Lebanon*

➢ Assisted team in firefighting mission
➢ Trained in firefighting situations
➢ Assisted in renovation of department

### PROJECTS ACCOMPLISHED

➢ **Cutting and De-strapping Robotic System**
Designed and manufactures a robotic system, in collaboration with BMW Robotics and Logistics, capable of localizing a cutter and a gripper on a plastic pallet cover to accurately cut, remove, and dispose of the straps holding them together with low cos and minimal actuation. This project is to be implemented on BMW production lines.
➢ **Waste to Energy Power Plant**
Thermally designed and sized a waste to energy conversion plant including a combustor, evaporator, pumps, heat exchangers, turbines, and a condenser

➢ **Plastic Strap Detection Algorithm**
Developed a vertical edge detection algorithm, using MATLAB, tested on detecting straps on BMW group pallet cover to be implemented in a cutting and de-strapping robot
➢ **Lift and Conveyor mechanism**
Designed a mechanical system using AutoCAD and SOLIDWORKS and implemented it using plexi-glass, metal sheets, and wood which aided the transport of items vertically and horizontally
➢ **Electric micro-car**
Designed an electric microcar using AutoCAD and Creo and implemented it for a competition for off-road capabilities, traction, stability and speed
➢ **Lego EV3 sumo wrestling robot**
Developed a sumo wrestling robot using a Lego EV3 kit and LABVIEW for a sumo wrestling competition

## Skills

Computer Skills: SOLIDWORKS, ANSYS, AutoCAD, Creo, EES, MATLAB, LABVIEW, MS Word, MS Excel, MS PowerPoint, MS Project, C++, HTML

Technical Skills: machining, woodworking, sheet metal working, welding, laser cutting, 3D printing, safety procedures

Soft Skills: Leadership, Teamwork, Adaptability, Problem-Solving

Languages: Fluent in English and Arabic

## Awards

**DEAN'S AWARD FOR CREATIVE ACHIEVEMENT IN MECHANICAL ENGINEERING - ** May 2019

## References

*Available upon request*