

# Atif Harooni

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## EXPERIENCE

### ENGINEERING SERVICES | MECHANICAL SYSTEM DESIGNER

Aug 2016 – June 2020 | Toronto, ON

- Principle Mechanical Designer for ESI's Mobile Robots Group. Successfully delivered robots for Logistics, Medical, Surveillance, Personal, and EOD use.
- Simulated loading on ESI's Robotic Arm to determine static and dynamic forces during normal operation.
- Travelled internationally to evaluate manufacturing facilities, conduct market research, and gather design specifications from customers
- Designed motion control system for parking enforcement robot in collaboration with the University of Ontario Institute of Technology
- Was interviewed on national TV about ESI's history and products, and appeared in promotional material.

### LIBURDI ENGINEERING | TURBINE DESIGN CO-OP

Sep 2014 – Dec 2014 | Hamilton, ON

- Created a 2D CFD analysis of a Hot-Gas Turbine to show performance can be optimized by modifying Inlet Vane, and Blade Geometry.
- Improved weld quality by modeling surface temperature of a welding shielding gas trail-cup during operation. Operators used this model to optimize their toolpaths and generate welds with lower oxidation.

### ABC GROUP INC. | MANUFACTURING ENGINEERING CO-OP

Jan 2014 – April 2014 | Toronto, ON

- Managed projects and R&D related activities pertaining to injection/extrusion blow moulded components.
- Tested and validated material properties of HVAC ducts, to ensure that they adhered to OEM specifications.

### B&W CANADA | NUCLEAR DESIGN ENGINEER CO-OP

May 2013 – Aug 2013 | Cambridge, ON

- Prepared calculations that determined Thermal-Hydraulic characteristics of a Nuclear Steam Generator.
- Determine heat duty of a steam generator at end of life conditions with maximum tube plugging.

### MORGAN SOLAR | DESIGN ENGINEER CO-OP

Sep 2012 – Dec 2012 | Toronto, ON

- Improved tracking accuracy of Savanna™ Dual-Axis Tracker by redesigning critical structures for greater stiffness.
- Conducted FEA to determine the stress response and deflection on the solar tracker during max wind loads.

### XSTRATA | PROJECT ENGINEERING CO-OP

Jan 2012 – April 2012 | Sudbury, ON

- Managed planning, design, and completion of capital construction projects, and maintenance projects.
- Reduced slurry pump downtime by installing impellers with DLC coating.

## EDUCATION

### UNIVERSITY OF WATERLOO

BACHELOR OF APPLIED SCIENCE IN  
MECHANICAL ENGINEERING  
(HONOURS)

Sep 2010 - April 2015 | Waterloo, ON

## COURSEWORK

Robotic Manipulators : Kinematic &  
Dynamic Control  
Numerical Control of Machine Tools  
CFD for Engineering Design  
Experimental Methods in Fluids  
Fluid Power Control Systems  
Industrial Metallurgy

## SKILLS

### CAD

Solidworks • ProEngineer(Creo)  
Inventor • AutoCAD

### PROGRAMMING

Python • C++ • Matlab • ROS  
Simulink • Labview

### DESIGN EXPERIENCE

CNC • Injection Molding • Sheet Metal  
Additive Manufacturing • DFM • DFA  
ANSYS • GD&T

## PROJECTS

### Robotic Arm: Golf Putter

Programmed a Robotic Arm to use a vision system to play golf.

### Argon Shielding System for Metal Powder Welds

Designed rig for making consistent metal welds using powdered zirconium.

## OTHER

### Research Assistant | UW

Aug 2015 - June 2016 | Waterloo, ON  
Investigated Additive Manufacturing  
Methods for Powdered Zirconium.

### Research Assistant | UW

May 2011 - Aug 2011 | Waterloo, ON  
Developed educational demos for 1st  
Year Engineering Students