

# Sari Kassar

kassar@umich.edu

Dedicated and detail-oriented with excellent interpersonal communication skills

## EDUCATION

### UNIVERSITY OF MICHIGAN

MSE IN MECHANICAL ENG'G

Graduating Apr 2018 | Dearborn, MI

Core GPA: 4.0/4.0

Thesis in Progress

### AMERICAN UNIV. OF BEIRUT

BEN IN MECHANICAL ENG'G

May 2016 | Beirut, Lebanon

Core GPA: 3.5/4.0

Study Abroad: UC Berkeley

## SKILLS

- MATLAB • SIMULINK • C++
- LabVIEW • CNC • Abaqus
- AutoCAD • SolidWorks • Minitab
- Excel • Word • Engine Principles
- Calibration • DOE • Modeling
- Research • Six Sigma • DIC
- Benchmarking • Data Acquisition

## COURSEWORK

- Internal Combustion Engines
- Degradation of Materials
- Automotive Manufacturing
- Energy Conversion
- Casting in Metals
- Adaptive Control
- Design and Analysis of Experiments
- Advanced Engineering Analysis
- Six Sigma and Cont. Improvement

## PROJECTS

- Computer Simulation of Knocking in a Downsized Turbocharged Engine: A combustion simulation model of a port fuel injection spark ignition engine
- Adaptive Control of a Differential Drive Non-holonomic Mobile Robot: A simulation model which proposed the design of an MRAC controller

## AFFILIATIONS

- Society of Automotive Engineers
- American Soc. of Mech. Engineers
- Treasurer at UM-Dearborn GUS

## LANGUAGES

English • Arabic • French

## ACADEMIC AND TECHNICAL EXPERIENCE

### UNIVERSITY OF MICHIGAN | ENGINEERING RESEARCH ASSISTANT:

CENTER FOR LIGHTWEIGHTING AUTOMOTIVE MATERIALS AND PROCESSING

Sep 2016 – PRESENT | Dearborn, MI

- Developed a numerical predictive tool to quantify material damage and model post-necking behavior of ductile alloys in automotive stamping applications
- Utilized MATLAB to implement model mathematical formulations and proposed an iterative solution scheme for increased computational efficiency
- Validated model against experimental data and calibrated for finite-element use
- Attended weekly meetings with research lead to report documented findings

### AMERICAN UNIV. OF BEIRUT | ENGINEERING RESEARCH ASSISTANT:

PROCESS, SIMULATION, AND MATERIALS MODELING RESEARCH GROUP

Sep 2015 – Aug 2016 | Beirut, Lebanon

- Innovated the design of a resilient foam liner prototype to enhance energy absorption of motorcycle helmets
- Slashed project costs (up to \$1500) by insourcing the manufacture of an ISO-J metallic head form by CNC machining (CAD to G-Code)
- Validated prototype performance against ECE22.05 engineering specifications
- Leveraged team communication to ensure timely completion of project goals
- Published work methods and results in ASME IMECE conference proceeding and was awarded for Creative Achievement

### PEPSICO | INTERN FOR RELIABILITY ENGINEERING

Jun 2015 – Aug 2015 | Beirut, Lebanon

- Analyzed 8 years' worth of stock movement data and developed a spreadsheet tool to facilitate inventory management on production lines
- Assisted plant engineers in root-cause analysis and repair of failed equipment
- Compiled prev. maintenance records to assist continuous improvement efforts

### MEA - AIR LIBAN | ENGINEERING TRAINEE

Dec 2014 – Jan 2015 | Beirut, Lebanon

- Explored aircraft continuous airworthiness procedures, fly-by-wire control, automation strategies and flight simulation
- Attained knowledge of various aircraft systems (electrical and mechanical) with focus on fail-safe mechanisms and multiple level redundancy
- Observed multiple aircraft overhauls through field trips (structure and engine maintenance, non-destructive testing)

## AWARDS AND HONORS

2018	Difference Maker Award	University of Michigan-Dearborn
2016	Graduate Research Assistantship	University of Michigan-Dearborn
2016	Dean's Award for Creative Achievement	American University of Beirut
2016	Best Poster Award	AUB 15th FEASAC Conference
2012	Boodai Endowed Scholarship Recipient	American University of Beirut

## PUBLICATIONS

2016	Towards A Safer Design of Helmets: FE & Exp. Assessment	ASME
In Review	Towards A Bioinspired Helmet Design: FE & Exp. Assessment	ASME
In Progress	An Anisotropic Damage Plasticity Model: App. for Mg AZ31B	