




# Siddharth Kakodkar

University of Waterloo  
MAsc, Mechanical Engineering

## Contact:

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## Summary of Skills:

### Technical:

- Hybrid Vehicle Development
- Project management
- Energy systems modelling & control
- Automotive manufacturing & assembly
- Research & Technical report writing
- Metallography

### Software:

- Matlab/Simulink + dSPACE
- Solid modelling (NX, Solidworks)
- AutoCAD
- MS Office & MS Project
- PLC/C/C++ Programming
- EE4/ EQuest

### Interpersonal/other:

- Analytical
- Critical thinking
- Problem solving
- Fast learner
- Team player
- Time management

## Education:

### Master of Applied Science (MAsc) in Mechanical Engineering

University of Waterloo

GPA: 3.9/4.0

September 2016 – August 2018

Waterloo, ON

#### Research Area/Thesis: Modelling and Control of Compressed Air Energy Storage (CAES) Systems

- Developed high fidelity extensible model of Adiabatic-CAES system including Thermal Energy Storage
- Developed control strategy to optimize system

### Bachelor of Applied Science in Mechanical Engineering (Honors, Co-op)

University of Waterloo

GPA: 3.0/4.0

September 2010 – August 2016

Waterloo, ON

## Selected Projects:

### Associate Project Manager

August 2016 – August 2018

EcoCAR 3/University of Waterloo Alternative Fuels Team

Waterloo ON

- Lead a team of over 100 students through EcoCAR3 international competition to re-engineer a 2016 Chevrolet Camaro to a Hybrid Electric Vehicle using a Parallel-Split architecture (hosted by GM & US DoE)
- Aligned Technical and Business team to make decisions based on both consumer and data focused design with emphasis on the Canadian market and driving
- Responsible for engineering goal development, risk management, stakeholder management and negotiating sponsor relations
- Used Matlab + Simulink for writing and analyzing controls algorithms and for Vehicle plant modeling
- Created workflow for component and system level test case development, diagnostics, & documentation
- Testing in SIL & HIL environment, on MicroAutoBox and In-vehicle using dSPACE tools
- Design, fabrication & install of exhaust system using DFSS
- Used NX 11.0 for Hybrid architecture space claim and modification
- Hosted training workshops and learning seminars for new team leaders joining their roles

## Experience:

### Intern – Powertrain Operational Excellence, Industrial Engineering

May – August 2015

Tesla Motors, Inc.

Fremont, CA, USA

- Executed various projects on Model S rotor assembly lines to improve cycle times, first pass yield, availability, safety & ergonomics (+18% output)

- Implemented tools to track project progress, audit performance, and identify improvement opportunities
- Modified assembly line processes & layouts to optimize man & material flow through the lines
- Educated and engaged cross functional teams towards projects targeted at continuous improvement
- Learnt how to develop & materialize concepts into a functional operational model for manufacturing

### **Production Engineering Student**

September – December 2014

DENSO Manufacturing Canada Inc.

Guelph, ON

- Implemented a countermeasure in the HVAC production process to correct a customer quality issue
- Designed various jigs, fixtures and assembly stations using Solidedge ST6
- Modified plant layouts to optimize material flow to include an additional assembly line
- Involved in process flow development, TPM, machine capability studies, process trials, 5s, poke-yoke, and control plan development throughout the plant

### **Facilities Engineer/Engineering Student Assistant**

September – December 2013

General Motors of Canada Limited

Oshawa, ON

- Assisted in the planning, coordination and execution of facilities projects (HVAC, Building, Fire Protection, Roofing, Electrical Distribution)
- Provided data analysis, research and recommendations for the R-22 phase-out project
- Created and updated plant layout drawings using AutoCAD 2012
- Conducted on-site review, inspections and reports of works in progress
- Became familiar with the manufacturing and assembly of the vehicles made at the Oshawa plant

### **Research Analyst**

January – April 2013

Caneta Research Inc./Caneta Energy

Mississauga, ON

- Prepared and conducted simulations for energy modeling purposes using the EE4 and eQuest software
- Assisted engineers in improving the overall energy efficiency and reducing operating costs in new commercial, institutional and multi-unit residential buildings
- Performed energy calculations and analysis based on architectural, electrical and mechanical drawings to ensure efficiency goals were met with minimal complications using excel spreadsheets
- Processed reports and presentations for clients

### **Research Assistant**

May – August 2012

Faculty of Engineering, University of Waterloo

Waterloo, ON

- Collaborated with graduate students to conduct research in the Uniaxial Compression Testing of Aluminum
- Dissected and performed a complete metallurgical analysis for an engine, with technical report of results
- Took self-initiative and served as a Teaching Assistant (TA) for Engine Dissection Labs
- Gained valuable knowledge in the field of manufacturing processes, metallurgy, and metallography

### **Engineering Trainee**

May – August 2011

Larsen & Toubro Limited

Mumbai, India

- Lead a team of 4 to develop a new method to carry out the pneumatic test for heat exchangers
- Proposed a system that decreased test costs by a third and reduced test time from 8 days to 2 days
- Became familiar with manufacturing process and working of a heat exchanger
- Gained valuable knowledge in the various techniques of fabrication and welding

## **Additional Awards & Activities :**

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### **Panelist – University of Waterloo Energy Network**

November 2017

University of Waterloo

Waterloo, ON

- Invited to sit at a panel to discuss the future of energy, associated technologies, and barriers to progress
- Only student on panel among industry and academic experts
- Audience included University students, academics, and the general public

### **Teaching Assistant – ME 101 – Mechanical Design**

January 2018 – April 2018

University of Waterloo

Waterloo, ON

- Developed and instructed design labs for 1<sup>st</sup> Year Mechanical Engineering course students
- Graded weekly assignments, midterms, and final exam

### **Teaching Assistant – ME 380 – Advanced Mechanical Design**

September 2017 – December 2017

University of Waterloo

Waterloo, ON

- Mentored 3rd year Mechanical Engineering students for their design projects
- Determined where students needed help and guided them to the correct solution by developing goals
- Recipient of the **MME award** for outstanding TA voted by the class as “Our best TA”

### **Teaching Assistant – ME 340 – Manufacturing processes**

January 2017 – April 2017

University of Waterloo

Waterloo, ON

- Instructed tutorials for 3rd Year Mechanical Engineering course students
- Graded weekly assignments, midterms, and final exam
- Recipient of the **Sanford Fleming and MME award** for outstanding TA voted by the class as “Our best TA”

### **Awards**

September 2016 – August 2018

University of Waterloo

Waterloo, ON

- University of Waterloo Graduate Research Studentship – 2 years research funding scholarship covering fees and additional expenses
- Several Teaching assistant (TA) awards for various semesters

### **Intramural Sports**

September 2010 – August 2018

University of Waterloo

Waterloo, ON

- Participated as team captain/member in the intramural soccer & cricket leagues during several semesters
- Soccer “Intermediate-level” league winner for several academic semesters

### **Interests:**

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**Music Mixing (Dj-ing), Technology, Soccer, Cricket, Theoretical and Applied Astrophysics, and Movies.**