

Muhammad Bilal Ahmed

2016 Mechanical Engineering, University of Waterloo

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SUMMARY OF SKILLS

- Certified SolidWorks associate with hands-on mechanical design experience in GD&T and DFM
- Extensive engineering analysis experience including FEA, root cause, and multi-body dynamics
- Diverse skills in software and electronics with experience in MATLAB, OpenCV, C++ and Arduino
- Passionate about product design and manufacturing with proven ambition to contribute creative ideas

WORK EXPERIENCE

Apple Inc.

Cupertino, CA, USA

Manufacturing Quality Engineer Intern | Soft Goods Manufacturing Design

Sept. – Dec. 2015

- Led fixture design for an automated inspection system, through DFM reviews, with multiple vendors
- Developed metrology, using MATLAB, OpenCV, and CCD for cosmetic inspection of watch bands and cases
- Visited supplier facilities in China to study existing processes and evaluate benefits of proposed system
- Determined system specifications required, and performed correlation and GRR tests during development

Instron

Norwood, MA, USA

Mechatronics Co-op | Electro-Mechanical Strain Products

Jan. – Apr. 2015

- Decreased sensor noise by 20% of vision strain gauge (AVE 2) through DOE and analysis in MATLAB

Singapore University of Technology and Design

Singapore

Vehicle Research Engineer Co-op | Engineering Product Development

May. – Aug. 2014

- Developed vehicle mass identification system, with 3% accuracy, for the SMART-NUS autonomous golf cart using MATLAB, Simulink, ECU, IMU, encoder, voltage and current sensors (See: <https://youtu.be/R2B-pm28eZc>)
- Programmed a semi-automated tool to decode vehicle sensor signals; validated method on Mitsubishi iMiev
- Built a vehicle signal simulator in MATLAB to significantly reduce testing time for CAN bus hardware

Toyota Motor Manufacturing Canada

Woodstock, ON, Canada

Product Engineering Student | Quality Control Engineering

Sept. – Dec. 2013

- Eliminated high rate steering defect and QC process downtime, through root cause analysis, for RAV 4 assembly
- Discovered flaw in vehicle electronics inspection and devised countermeasures
- Utilized statistical sampling, design of experiment, trend analysis, CMM and other quality control tools
- Improved correlation of electric heater test significantly by optimizing test program parameters

Amphenol Canada Corp.

Toronto, ON, Canada

Design Engineer Co-op | Data Telecom

Jan. – Apr. 2013

- Designed low form factor connectors, and produced 3D models and drawings in Solidworks
- Optimized design of socket contacts using FEA to eliminate static yielding of stamped metal contacts
- Gained exposure to GD&T, and Design For Manufacturability (DFM) for plastic injection molded parts

University of Waterloo Rocketry Team | Mechanical Engineer Co-op

May – Aug. 2012

- Fabricated parts in shop, assembled and performed prototype validation for 20ft liquid bipropellant rocket

EDUCATION & PROJECTS

University of Waterloo

Waterloo, ON, Canada

BASc, Honors Mechanical Engineering (With Distinction) - Co-operative Program: **3.70 GPA**

2011 – Apr. 2016

Certified SolidWorks Associate | Dassault Systemes

Sept. 2012

Autonomous Drone Battery Swapping Station | Capstone Design Project

May 2015 – Apr. 2016

- Prototyped robotic battery swapping station for quadrotors using actuator, Arduino, linear rails among others

More projects showcased at mbahmed.com