

Jared Dempster

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Work Experience

Armatec Survivability Corporation, Dorchester, Ontario

Engineering Intern

Sept 2019 – Aug 2020

- Designed a vehicle hull welding fixture to support a 2000kg load through an unlimited roll motion
- Conducted tolerance stack up analysis on seat assemblies to identify root cause of installation issues
- Implemented red line corrections on internally identified and customer requested changes
- Drafted engineering reports and facilitated testing to prove compliance with military standards
- Created an excel model to analyze the dynamics of a safety critical prototype, allowing the user to input piston and torsion spring selection, kinematic hardpoints, vehicle attitude and accelerations, outputting mechanism deployment time.

Avro Pattern, London, Ontario

Shop Assistant

Summer 2018

- Manufacturing of large sand-casting patterns, mainly for use in the Aerospace Industry.
- Programming and operation of CNC mills and conventional lathes.

DJH Designs, Oakville, Ontario

Summer 2017

Shop Assistant, High School Intern (2014)

Summer 2014

- Manufacturing and assembly of laser measurement systems.
- Programming and operation of CNC mills and conventional lathes.

Project Experience

Western Formula Racing, Western University, London, Ontario

Technical Director

Sept 2020 - Current

- Designing the structure, packaging, fusing, cooling system, and integration of a self-developed battery management system for our teams first ever custom battery modules and 2nd generation battery pack
- Leading a team of 40 students through the challenge of major vehicle redesign, while combating the limitations imposed by Covid restrictions. Currently on track to meet historical milestones, achieved through closely monitored scheduling & scope.

Suspension Member, Recruitment Lead

Sept 2019 – Aug 2020

- Designed camber-adjustable front uprights
- Compiled the physical testing data of race tires which motivated the change to low profile continentals
- Conducted DFM reviews, CNC and CAM training, adopted an accelerated timeline to successfully manufacture all required components before restrictions prohibited shop access, making our team one of a few running vehicles in North America

Suspension Lead

Sept 2018 – Aug 2019

- Designed rear suspension packaging solution for the team's first full carbon fiber chassis.
- Developed numerical vehicle dynamics simulations and analyzed historical data to determine key vehicle attributes including motor selection, final drive ratio, and battery capacity of the team's first electric car.
- Integrated the detailed design of a suspension system with vehicle subsystems, finalized parameters with consideration to loads and interferences using a complete CAD model in SolidWorks.
- Mentored recruit members through the development of critical and ancillary mechanical designs.

Suspension Member

Sept 2017 – Aug 2018

- Designed and machined discrete adjusters to rapidly modify ride heights. Used 3D CAM toolpaths, FEA analysis.
- Implemented a driver training simulator which matches an extensive number of vehicle parameters.

Skills and Interests

Software: SolidWorks w/ PDM 1000+ hours, MATLAB, Excel, PTC Mathcad

Manufacturing: CNC Programming, HSM Works, MillPower3, Conventional Milling, Lathe

Interests: Automotive Sim Racing, Guitar, Machine Tools, Metrology

Education

Candidate for Bachelor of Engineering Science, Mechanical & Materials

Western University, Ontario, Canada