JAMES BATES

Results driven engineer with a passion for design, public speaking and sustainability

jamesbates.ca
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Toolbox

Design: SolidWorks (+ FEA), Fusion360, AutoCAD, GD&T, GrabCAD, 3D Printing

Software: C++, C#, MATLAB, SQL, PostgreSQL, Git

Tools: .NET Core, ReactJS, Firebase, Mill/Lathe, Arduino, MS Office

Experience

Toyota Motor Manufacturing Canada | Systems Engineer | Sept – Dec 2020

Led shop floor system support team 3A (5 team members) in conducting design reviews, team meetings and project scheduling

Designed low battery detection system for Autonomously Guided Vehicles (AGVs), resulting in an estimated annual savings of $100,000

Implemented 'fake' VIN number feature into QR code generating web-app to accommodate the production of destructive testing parts

Developed horizontally scalable data collection application and email delivery microservice achieving a 60x quicker delivery time of essential notifications

Kai Cao Nuclear | Mechanical Design Engineer | Jan – Apr 2020

Developed project procedures, drawings, planning and scheduling for a Turbine Refurbishment of Darlington Nuclear Reactor Unit 3

Analyzed fuel channel thermal expansion in three dimensions to predict the time until critical condition

Projects

AutoCrop | University of Waterloo | May 2019

Designed and Prototyped an autonomous crop planting robot using RobotC (C#), SolidWorks and Ultrasonic, Gyroscope and Touch sensors that could navigate most gardens without assistance

Utilized modern additive manufacturing and fabrication techniques to construct custom components

BankerGoose | ENGHACK (Winner) | May 2019

Developed a banking application that leverages Interac e-transfer API to give kids experience with the fundamentals of online banking and the ability to manage real money through a game-like interface

Built parental interface and home playground environment using C# and WPF, along with creating a detailed design plan Winning – **Interac Best Use of Design Thinking Award**

Storm | Hack the North | Sept 2019

Developed VoiceFlow application to integrate with a Google Home that collects speech data and uses a custom Machine Learning Pipeline to generate images related to the users words

Designed clean, easy to use login and notebook web-interfaces using React, HTML and CSS

Awards

| SHAD Fellow – Dalhousie University **|** President's Scholarship – UWaterloo **|** BC Excellence Scholarship **|**

Education

University of Waterloo, Honours Mechanical Engineering | 2nd Year

Digital Computation (**C++**/**MATLAB**), Mechanical Design (**SolidWorks**, **AutoCAD**, **GD&T**),

Materials Engineering I & II, Electromechanics, Circuits & Instrumentation, Linear Algebra

Interests

Team BC Volleyball,

Skiing, Cooking

Camping, Hiking