

Russ Case

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Summary

Driven worker and learner, with bachelor's degrees in both Mechanical Engineering and Visual Arts. Strong work history, with hands-on project experience in design, testing and manufacturing, as well as a background in communication, coordination and leadership. Particularly interested in design, testing, motion control and automation. Licensed as a blaster in the State of Washington.

Education

B.Eng., Mechanical Engineering

2019

British Columbia Institute of Technology

- Wendy B. McDonald Memorial Award
- GPA: 3.4/4.0

Diploma, Mechanical Engineering Technology (With Distinction)

2017

British Columbia Institute of Technology

B.A., Visual Arts

2015

University of British Columbia

Work Experience

Development Engineer, R&D IPT

2019 – Present

Systema Technologies, Kirkland WA

- Acted as lead engineer on a rocket propulsion-related SBIR through risk reduction testing, revision and successful demonstration shot
- Managed a quick-turn DoD research program during trade study and proof-of-concept phases
- Wrote multiple technical reports and research proposals

Engineering Co-Op, Testing Team

Summer, 2018

Zaber Technologies, Vancouver B.C.

- Designed, built, and modified test fixtures and equipment, including:
 - Vibration/Drop-test fixtures
 - Laser interferometer retroreflector mounts
 - Vacuum chamber feed-through ports
 - Rotary and linear accuracy test setups
- Created test plans, then performed and documented product and component tests:
 - Developed publishable accuracy specifications for a linear actuator product line
 - Tested device accuracy with linear encoders and laser interferometers
 - Tested speed/torque curves, compiled report on stepper motor performance for production
 - Disassembled and inspected RMA'd device to determine source of defect during production
- Updated, modified and wrote Python test scripts to interface with motion control devices, linear encoders, load cells, and thermocouples

Production Coordinator

2008 – 2015

DHX Media/Studio B Productions, Vancouver B.C.

- Oversaw teams of up to 15 artists during the production of multiple television shows
- Responsible for allocating work, as well as organizing and maintaining a revision system

Engineering and Mechanical Projects

Baja SAE Off-Road Racing Team

- 2 years as Team Captain
- 1 year as Chief Engineer, focused on creating strain testing and telemetry system
- Participated in 4 Baja SAE endurance race events

Senior Capstone Project (2019): wireless torque/power-sensing data logger

- Self-contained axle module, installs as a single drop-in part with no modification required
- MEMS gyroscope, accelerometer, and strain gauges used to output live power data via Bluetooth
- Directly addressed gyro/accelerometer based on datasheet without the use of previous libraries

Sophomore Capstone Project (2017): Baja SAE Tube Chassis

- Lead designer/drafter, used Solidworks to create 3D model and 2D production drawings
- DFMA: Simplified assembly and welding joints through use of 3D bending and jig system
- Designed a cost-effective jig system to streamline assembly and constrain critical geometry

3D Printer Projects

- Built a self-sourced cartesian printer in 2012-2013
- Designed and built a Delta-style printer for BCIT Open House 2016

Automotive

- Completed an automatic-to-manual transmission swap and head rebuild on classic car
- Converted a van into camper, including hardwood floor, folding bed with storage and solar array

Software, CAD, and Coding Skills

- Experienced with modeling and simulation using Solidworks and Autodesk Inventor
- Experienced with C and MATLAB. Schoolwork included:
 - Simulation of finite-difference heat transfer, fluid flow, and projectile trajectories
 - Interfacing microcontrollers to sensors, keypads and displays
 - Numerical methods for solving differential equations
- Intermediate coding skills in other languages: Can interpret, write, and modify programs in C++, Python, Simulink, LabView and PLC ladder logic (Allen-Bradley MicroLogix)

Communication and Leadership

- Comfortable with group and individual communication, both written and in-person
- Skilled technical writer; experienced in creating training documents and reports
- Led a Baja SAE racing team with 30+ members, participated in 4 SAE races.
- Managed teams of up to 15 workers in an office environment

Machining and Shop Skills

- Manual: Proficient with lathes, mills, and basic shop equipment (grinders, saws, hand tools)
- CNC: Proficient with 3-Axis CNC mills, HSMWorks CAM, waterjets, and laser/plasma cutters
- Shop drawing experience, including weld symbols, 3D bend diagrams, and GD&T standards
- Familiar with MIG and Oxy-Acetylene welding