Cole Stevens

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TECHNICAL SKILLS

Software
- Proficient: C#, C
- Familiar: C++, VBA, SQL, Assembly, JavaScript
- Bare-metal embedded systems
- Game Design in Unity
- ATMega, MSP430
- UART, I2C, RS-232, USB

Electrical
- Peripheral Selection
- Peripheral Integration
- Soldering, Oscilloscopes
- Connector Assembly

Mechanical
- Proficient: SolidWorks
- Familiar: AutoCAD, MAYA, Blender
- CNC Machining Design
- Sheet Metal Forming & CNC
- Injection Moulding Design
- 3D Printing
- Basic Machining Skills

ACADEMIC

University of British Columbia **May 2021**
Bachelor of Applied Science, Mechanical Engineering, Mechatronics Option
- Graduated with Distinction, achieving an 86% average.
- Completed Cooperative Education Program.
- Degree focused on interdisciplinary study of mechanical, electrical, and computer engineering principles.

TECHNICAL WORK EXPERIENCE

Smart Ecosystem **September 2024 – Present**
Freelance Math/Engineering Expert
- Training generative AI models by prompting and evaluating math and engineering specific responses.

International Travel **March 2023 – May 2024**
- Traveled internationally in Europe and Asia; volunteering on farms and advancing personal rock climbing goals.
- Developed a video game in Unity C# and participated in a game development competition.

STEMCELL Technologies (Vancouver, British Columbia)
Associate Mechanical Engineer **June 2021 – February 2023**
- Designed, developed, and tested new laboratory automation systems, sub-systems and consumables.
- Co-inventor: WO2024103186A1 – Automated Fluid Exchange System, STEMCELL Technologies, 2024
- Led the development of bare-metal, multi-axis mechatronic and pneumatic manufacturing equipment, achieving a 50% improvement in product performance and reliability.
- Engineered custom mechatronic equipment that automated test procedures and data analysis, reducing development and production testing time by 80%.
- Developed low-level drivers for peripheral interfaces, optimized real-time machine cycles using hardware and timer interrupts to manage state, and performed integrated debugging.
- Collaborated on the design and development of a sophisticated spinning blood filter for sample purification, concentrating on the design of the injection-molded rotor, filter, and enclosure system.
- Created Excel and SolidWorks macros, communication materials on microcontroller system design, and provided programming advice for team members.
- Took the initiative of learning and applying Design of Experiments (DOE) data analysis techniques using JMP to enhance variable analysis efficiency, thereby improving testing rates and costs. Consolidated my research into an accessible resource for team members.
- Completed drawings, performed tolerance stack-up analysis, and applied GD&T principles on a large volume of components and assemblies for several prototype instruments being transitioned to production.

Instrumentation Co-op **January – March 2020**
- Designed and built machines to automate laboratory procedures in the Instrumentation R&D department.
- Developed and conducted test procedures to aid development processes.
- (Laid off due to the pandemic, but rejoined the team after graduation.)

Philips Lighting (Langley, British Columbia)
Continuous Improvement and Transformation Co-op **May – December 2018**
- Improved products, factory processes, and increased efficiency in the Continuous Improvement department.
- Developed an employee database using Microsoft Access and SQL to track employee skills and training.
- Automated workcenter instruction document creation with VBA to comply with ISO9001 standards.
- Communicated with managers, supervisors, and factory staff to create solutions to improve factory efficiency.

TECHNICAL PROJECTS

Unity Video Game Project **November 2023 – Present**
- Competed in a video game contest and made a simple fishing video game in two days.
- Continued development of the game independently into a more expansive top-down role playing game.
- Enhanced high-level programming skills, learned the Unity API, implemented shaders, and created game art.

Interferometer Capstone Project, UBC **January – May 2018**
- Worked with the company Zaber Technologies to improve their interferometer measurement apparatus to gain increased resolution and measurement reliability on a nanometer scale.
- Studied the effects of air currents and temperature fluctuations on displacement and designed a datum reference to improve accuracy of measurements. Used Finite Element Analysis and Fourier Transform techniques to study performance.

OTHER WORK EXPERIENCE

StraightLine Bike and Ski (Fernie, British Columbia)
Bike Mechanic **May – August 2017**
- Installed, replaced, and repaired bike brakes, suspension systems, pivot systems, and hydraulics on high end mountain bikes.

Outdoor Shop Staff **November 2015 – May 2016**
- Handled the register and provided assistance to customers seeking outdoor equipment and accessories.
- Performed ski repair and maintenance.

Backcountry Trail Experts (Fernie, British Columbia)
Trail Builder **August 2016**
- Designed, built, and maintained challenging mountain bike trails with a team in the local area.

Rosedale Community (Calgary, Alberta)
Volunteer Soccer Coach **April – July 2015**
- Taught soccer skills and techniques, managed practices and game strategies for a mixed gender soccer team of ages 14-17.

Calgary Stampede (Calgary, Alberta)
Concession Stocker **July 2014**
Usher **July 2013**