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Ronan Tunney

https://r0nand.github.io/

SKILLS & EXPERIENCE

Programming Languages	JavaScript, SQL, C/C++, C#, R, Python, Visual Basic, Bash
Tools & Frameworks	Git, Docker, .NET, Jenkins, ROS, SSH, MVVM, HTML/CSS, XML
Competencies	Statistics, Numerical Modelling, Electronics, Mechanical Design

EDUCATION

University of Waterloo *September 2015 - April 2020*
B.S. in Mechanical Engineering & Options in Management and Mechatronics
With Distinction, Dean's Honours List, U Sports Academic All-Canadian (Track and Cross-Country)
Relevant Courses: Data Structures and Algorithms, Intro to Microprocessors and Digital Logic, Microprocessor Systems and Interfacing, Digital Control Applications, Fluid Power Control Systems

EXPERIENCE

Abbott Point of Care Dec 2021 - Apr 2024
Intermediate Data Engineer *Ottawa, ON*

- Independently performed the development, validation and deployment of a silicon wafer map editor database application in C#.
- Integrated C/C++ wafer inspection software to work with a new thin film measurement machine and spectrometer.
- Refactored the data engineering common library to improve the performance, behavior and aesthetics of dependent .NET applications
- Delivered an application deployment and installation solution which allowed developers to install multiple Development/Validation/Production versions of database applications on their local machines.
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Abbott Point of Care Sep 2020 - Dec 2021
Associate Engineer *Ottawa, ON*

- Used R and Microsoft SQL Server to design and develop a dynamic data processing and statistical analysis backend for the calibration and disposition of several blood testing cartridges and reagents.
- Wrote, validated and deployed three R packages responsible for database queries, statistical analysis and document generation.
- Wrote a high performance optimization algorithm in C++ for the calibration of cardiac marker blood testing products.

Ontario Die International Apr 2019 – Aug 2019
Robotics Developer (Internship) *Kitchener, ON*

- Wrote a data collection process in C++ to aggregate steel forming data for machine learning purposes.
- Built a system to record and playback robot perception and sensor data.
- Improved the onboarding process by developing and documenting a bash alias repository.
- Designed test cases which exposed flaws in new software features.

Avidbots Corp. Aug 2018 – Dec 2018
Software Developer (Internship) *Kitchener, ON*

- Enhanced the reliability of company robots by writing a Python back-up system which would recover customer setting files in the event of a failed startup.

- Quartered the development time required to build and validate of the company's cleaning plan tools using Jenkins and Bash scripts.
- Reduced the size of robot Docker image files by writing a smart dependency handler to install prerequisite software for running and compiling its software.

PROJECTS

Personal

- **Interactive Travel Map** Created a web page that pans to the locations of photos from a travel gallery.
- **Physics Engine** Programmed a rigid body physics engine in JavaScript.
- **C++ Fluid Simulations** Programmed and rendered interactive fluids in C++ with OpenGL.
- **Robot Simulations** Set up the simulation of a differential drive and robot arm using Gazebo and ROS.
- **3D LED Display** Soldered a 5X5X5 grid of LEDs and programmed the output animations with an Arduino.
- **Miniature Segway** Built a 2-wheeled self-balancing robot.
- **Quadcopter** Built a remote-controlled Arduino quadcopter.

School

- **Martian Aeroponics** Designed and built an aeroponic system prototype to grow kale on Mars.
- **Airfoil Modelling in MATLAB** Numerically solved airfoils' lift coefficients and streamlines.
- **Computation Fluid Dynamics** Wrote an extensive report on the modelling of air mixing with ANSYS.
- **Finite Element Analysis** Used Abaqus to solve for stress concentration functions.
- **Ball and Beam Control** Developed a control system in LabView which met project specifications.
- **Seed Planting Robot** Designed an automated seed dispenser in SolidWorks and programmed the robot.