

Ali A. Warraich, EIT

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EDUCATION

BASC. Mechatronics Systems Engineering

Simon Fraser University, Surrey BC

2017

SKILLS

Software

- C, C++, Java, PHP
- G-code
- SolidWorks/AutoCAD
- MS Office
- MATLAB/LabVIEW/Maple
- LTSpice/P Spice/Eagle
- PLC

Hardware

- Electronic equipment (DMM, oscilloscope, function generators)
- Power tools
- Drilling, sawing
- Soldering
- Welding (TIG, MIG, Oxyacetylene, stick)

Technical Skills

- Mechanical testing
- Stress-strain analysis
- Technical drawings and writing
- ARM microcontrollers
- Error analysis
- Circuit analysis
- IC engine troubleshoot
- 3D printing

WORK EXPERIENCE

Manufacturing Engineer, Volta Air Technology Inc.

April 2018 – Present

- Assembled wireless AC and refrigeration systems
- Responsible for fitting AC pipes, making wiring harnesses, and fuse boxes
- Used SolidWorks to design parts that were sent off for CNC machining

Mechanical Engineer, Elix Wireless Charging Inc.

Feb 2017 – Jan 2018

- Assembled wireless electric chargers that used Magneto-Dynamic Coupling (MDC) technology to charge batteries of electric cars
- Responsible for motor windings, PCB board component testing, and mechanical components that made up the MDC device
- Used SolidWorks to design parts that were either 3D printed or sent off for CNC machining
- Presented weekly reports to team about hardware failure points, advised solutions
- Created technical documents and monthly reports for management

Co-founder of Orello Hearing Inc.

Jan 2016 – Jan 2017

- Founded company to provide solutions for the hearing impaired
- Designed and implemented a patent-pending custom fit hearing device that molds to any individual's ear was devised from scratch from PCB design to electronic enclosure design to custom fit mechanism
- Hearing aid provides basic features such as: frequency tuning, volume control, background noise filtering, custom fit ear tip
- Selected for commercialization to seek viable market opportunities by SFU Venture Connection

Aircraft Maintenance Assistant, Acro AeroSpace Inc.

Jan 2012 – April 2012

- Disassembled helicopter rotors and transmissions using specialized power and non-powered tools
- Inspected components for quality control under UV lights for fractures due to metal fatigue, stress and friction
- Recommended repair procedures to workshop technicians

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WORK EXPERIENCE CONTINUED

Tutor, Amazing Tutors Inc.

April 2012 – December 2015

- Helped students deal with difficulties in mathematics, physics, chemistry, biology and English
- Communicated and broke down complex scientific and non-scientific ideas for easy consumption
- Administrative duties included: registering students, issuing receipts, opening & closing tutoring centres

TECHNICAL PROJECTS

Pick and Place Robotic Arm

April 2016

- Used Dragon12-Plus and an H-bridge circuit to control a pick and place robot
- Used the keyboard to input an angle between 0° and 180°. The arm would then move to the asked angle and pick up an object using its electromagnet
- Techniques used: PWM, PDI controller, C

Digital Logic Microcontroller Project

Dec 2015

- Soldered joysticks and LEDs into an array that connected directly to an ARM MCU
- Used CodeWarrior IDE suite to program the microcontroller in C
- Used joysticks to manipulate the direction and speed of the scrolling text on the LED array; the text was input by the user
- Techniques used: PWM, UART, C, soldering

Design and Implement a Pop Machine Management Solution

Jan 2015

- Implemented a software solution using the C++ language to manage a pop machine
- To keep the software organized it was given two modes of operation: user mode and manager mode
- The division of modes also allowed the project to be more compact and modular

Design and Implement a Video Rental Management Solution

April 2012

- Used Java language to implement objects and user-friendly GUI environment
- Objects were created to handle different modes of the rental system
- Implemented redundancies in the code to verify that the inventory was updated correctly

PERSONAL PROJECTS

Jaguar XJR Restoration

November 2017

- Used technical drawings to machine components or to upgrade existing components
- Used power and air tools to disassemble engine after removal. Worn out parts were renewed
- Changed ignition timing to improve performance and to reduce fuel consumption
- Cut out rusted body panels, welded sheet metal, and refinished area

INTERESTS

- Avid snowboarder
- Classic car restorer
- Founding member of the SFU Squash Club
- Founding member of Black 'N' Yellow hockey team