Resume - Matthew Stephen Smith

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EDUCATION

UNIVERSITY OF QUEENSLAND St Lucia, QLD — 2015-2019
Bachelor of Engineering (Honours) (Electrical Engineering Extended Major)

SKILLS

Programming Languages: C, C#, Matlab, Python, HTML, JavaScript
Operating Systems: Windows, MacOS, Linux, FreeRTOS
Software: Altium Designer, Kicad, Matlab, Simulink, LTSpice, CAD
Embedded Systems: Arduino, Atmel, Espressif, STMicroelectronics, FPGA

WORK EXPERIENCE

MACHINEMONITOR Banyo, QLD — January 2019 - March 2020
Graduate Electrical Engineer

- Condition monitoring of rotating machines including risk assessment, predicted failure mechanisms, and recommended maintenance
- Performing/interpreting a range of high-voltage condition assessment tests including (but not limited to) insulation resistance/polarisation index, dielectric dissipation factor, partial discharge, and DC ionisation against relevant electrical test standards
- Delivering machine condition assessment reports to customers
- Managing online condition monitoring systems (AnomAlert) and delivering routine dashboards to customers
- Electrical instrumentation management/maintenance
- Construct electrical models of motor/generator insulation systems

ARC HARDWARE INCUBATOR Fortitude Valley, QLD — December 2018 - January 2019
Electronics Engineering Intern

- Engaging with startups to assist developing minimum viable products
- Prototyping experience using CAD, 3D printing, and laser cutting

UNIVERSITY OF QUEENSLAND St Lucia, QLD — February 2018 - June 2018
Second Year Electrical Engineering Tutor

- Tutoring for ELEC2003 *Electromechanics & Electronics*
- Assisting students in practical classes and tutorial classes

PROJECTS

Analysis of digital control systems for grid-connected solar inverters

- Final-year thesis project examining optimal digital control methods for solar inverters
- Extend standard inverter control methods to consider grid-impedance variation for more stable control in wider range of operating conditions

Electrocardiogram hardware frontend with QRS wave detection

- Constructed a high gain differential amplifier with analog filtering stages for displaying a person's heartbeat
- Considered safety when designing electronics involved in measuring the body
- Digital signal processing implemented to detect the occurrence of the QRS wave (tested in MATLAB and ported to a Teensy 2 microcontroller)

Internet of things (IoT) portable monitoring device (Team)

- Data logging project for recording temperature, humidity, and ultraviolet index with GPS location tracking
- Ultra-compact PCB design for portability and mounting to existing system
- ESP32 microcontroller to interface with sensors and send data securely over WiFi
- Software interfaces to display recorded data and interpret securely transmitted data

Electronic DC load

- 0-30 V, 0-3 A adjustable electronic load
- Simulated in LTSpice and schematics and PCB designed in Kicad
- Input protection considerations for overvoltage and reverse polarity scenarios
- Thermal simulations and solution using CPU heatsink and fan
- Firmware for digital control and monitoring

REFEREES

Andriy Kotykhov – Machinemonitor - Chief Executive Officer — **0448 063 368**
Ron Scollay – Machinemonitor – Principal Engineer — **0418 689 425**

Current – 28 May 2020