ANDREW SIMON WILSON

Engineer & EMIMEO Programme Candidate

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CAREER AIMS

- Gain more in-depth knowledge in Physics, Electronics, and Software Engineering.
- Attain a Masters in Physics, Electronics, programming, or similar fields.
- Obtain an industry or PhD position and gain experience in Physics, Electronic Design, Mechatronics, Signal-Processing, or a related field depending on my obtained masters.

These career aims are the goals I intend to achieve in the next five years. However, I have a general love of learning, engineering, and research in general and my desire to learn, create, and explore will never cease.

RELEVANT WORK POSITIONS

Seven Technologies Group

Student Mechatronics Engineer

September 2020 – July 2021 | Lisburn, Northern Ireland

Design and testing of a prototype, portable PTU (Pan & Tilt Unit) and camera controller design for Seven Technologies as part of my university final year project.

- Embedded Linux-based OS/Kernel/Device-Tree programming for the NVIDIA Jetson Nano & Xavier NX platforms.
- Analogue & high-speed (HDMI, USB SS, MIPI-CSI2, etc.) digital design, and PCB Layout using Altium20.
- Mechanical enclosure design with consideration of heat dissipation using SW.

Electronics Placement Engineer

May 2019 – August 2020 | Lisburn, Northern Ireland

- Analogue / high-speed digital circuit design and PCB Layout based on given specifications both in projects on my own, and as part of a team of Engineers.
- Testing/design of low-level software & edge compute ML algorithms for an Nvidia Jetson TX2 based, embedded, smart sensor system, and hardware debug of the device itself.
- Embedded PIC microcontroller programming, testing, and hardware debugging involving various beacons, trackers, and communication devices.

Ulster Society of Student Engineers

Chairperson

May 2018 – May 2019 | Ulster University, Northern Ireland

- Management of, and participation in, technical projects, including but not limited to: NI Robotics League, RF Telescope, Greenpower electric car, etc.
- Designed, founded, and coordinated the first maker-space for Student Engineers in Ulster University
- Organised multiple STEM outreach programs for Sentinus, Greenpower, etc.

JESSE Blinds and Shutters

Welder, Fabricator, Fitter

May 2016 – May 2017 | Stoneyford, Northern Ireland

- Manufacture and assembly of bespoke shutters, awnings, wind-breakers, gates, railings, etc. from technical drawings using MIG/ARC Welding, power/hand tools, and a variety of Engineering techniques.
- Production of technical drawings to customer specifications and drafting engineering drawings from self-recorded measurements.

TECHNICAL SKILLS

Analogue/Digital Electronics
Mechanical Design | PCB Design
Prototyping | Python3
Embedded programming (C/C++)
Robotics | Embedded Linux
Pytorch Framework

Altium/KiCAD ●●●●●
LTSpice ●●●●○
SolidEdge/Works ●●●●○

LANGUAGES

LaTeX ●●●●●
Embedded C/C++ ●●●●○
BASH/Linux ●●●●○
Git ●●●●○
Python ●●●○○
MATLAB ●●●○○

PROFESSIONAL SKILLS

Problem Solving | Fast Learner
Leadership | Autodidact | Initiative
Good Communication | Teamwork

ACADEMIC INTERESTS

Mechatronics & Robotics
Control Theory | ML & AI
Programming | Signal Processing
Embedded Systems & Linux
Electronic & Mechanical Design

EDUCATION

BEng Mechatronic Engineering and Diploma in Professional Practice

Result Pending – Average 69%

Sep 2017 - May 2021 | Ulster University

Year One	Results
Introductory Software Development	98%
Professional Studies	91%
Analytical Methods for Engineers	84%
Engineering Fundamentals	79%
Electronics 1	61%
Mechanics 1	43%

Year Two	Results
Microcontroller Systems	94%
Electronics 2	79%
Control Theory and Applications	66%
Electrical Machines	65%
Engineering Programming	62%
Engineering Analysis	47%

Year Three	
Industrial Placement	82%
Mechanics 2	40%

Year Four	
Mechatronics 1	*Pending...*
Embedded Systems	*Pending...*
Industrial Management	*Pending...*
Mechatronics 2	*Pending...*
ASICs and Digital Design	*Pending...*
Final Year Project	*Pending...*

BTEC Level 3 180-Credit (UK Credits) Extended Diploma in Manufacturing Engineering

Final Grade: Triple Grade - Distinction* Distinction* Distinction* (>80% Average)

Sep 2013 - May 2015 | South Eastern Regional College (SERC, Northern Ireland)

Earned essential practical and theoretical mathematics, electronic, and mechanical skills in the modules completed in this course. A selection of Completed Modules include (but are not limited to): Application of Computer Numerical Control in Engineering, Computer Aided Manufacturing, Properties and Applications of Engineering Materials, etc.

PERSONAL PROJECTS

Rogue GP, Independent Race Team

Design Engineer & Team Member

Nov 2019 – Present | Northern Ireland

AS-Wilson/RogueGP

Self-funded Green Power Electric vehicle race team. Working in a team of Engineers to design and manufacture a car (Leictreachas - Irish for electric) with the goal of competing worldwide.

- MCAD design and production of technical drawings for the vehicle chassis, suspension, and drivetrain.
- Manufacture of prototypes and working designs, using a variety of tools and techniques including Aluminium TIG welding, aluminium casting, composites manufacture, power & hand tools, etc.

Primary Engineer, Narrow-Bridge Vehicle Detection System

Engineer

Sep 2020 – Dec 2020 | Ulster University

mjennings061/primary-engineer

Team-based project using C++ programming of microcontroller (arduino) and PIR sensors to detect passing cars before a narrow bridge. A signal will be sent, either via Wi-Fi or RF communications, to a receiving device to warn oncoming vehicles of the obstruction using LEDs. Project was completed in mid December 2020.

Interdisciplinary Approaches to Biology

Selected Participant

Jul 2019 | EMBL, Heidelberg, Germany

Two week summer school which introduced undergraduates from a variety of backgrounds (Engineering, Physics, Biology, etc.) to the current research at EMBL and other institutions. I obtained hands-on experience in wet-lab work, high-speed microscopy, and using machine learning and computer vision to analyse biological data.

REFERENCES

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