## Personal Details


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## Profile

I have excellent attention to detail with over 20 years engineering experience. Skilled in embedded software on Arm cortex 32 bit Architecture, electronics (designed SMPS), interfacing to off chip hardware, hardware and software debugging (Mixed signal scopes and JTAG) and RTOS.

## Further Training and Skills:

- Embedded C, Python, C++, and Java Software Programing.
- ARM Cortex M0, M3, M4 32 bit Processors.
- FreeRTOS.
- Kiel uVision4, Eclipse & Netbeans IDE.
- Matlab and Simulink.
- I2C, UART, Bluetooth, IoT.
- Hardware and software debugging.
- Switch Mode Power Supply (SMPS) design.
- GIT, Jira, Agile, Scrum.
- Control Theory Frequency and Time Domain.
- VHDL.
- Linux Shell.
- Microsoft Project, Word, Excel & PowerPoint.
- Windows & Linux OS.
- Full Drivers Licence.

## Employment History

### September 2018 – Present

Employer: **Jaguar Land Rover, Shannon, Ireland.**

Job Profile: **Embedded Software Developer – R&D Benchmarking**

Employed as an embedded software developer in the benchmarking team at Jaguar Land Rover (JLR). This is an R&D position. I am tasked with benchmarking CPU and memory resources on short-listed ECU hardware to ensure they meet requirements. These ECU's will be used in the next generation electrical vehicle Architecture currently in development. Porting production JLR software onto the ECU to allow representative and accurate benchmarking.

- Porting embedded software to ARM.
- Stubbing application inputs - CAN, Flexray, ADCs, and Sensors etc.
- Problem Isolation, fault finding.
- Debugging using Lauterbach debugger.
- Test, Validation.
- Report writing.
- Interfacing with JLR engineering team internationally.

**January 2016 – September 2018**

Employer: **University of Limerick, Ireland.**

Job Profile: **Post-Doctoral Researcher – Intelligent Power Management & Digital Control Research Group**

My research work focused on hardware and software implementation of adaptive digital control laws for two projects:

1. ADACON: Next generation smart LED lighting applications using a PFC Boost / Flyback Topology.
2. RESCON: Digitally-Controlled LLC Resonant SMPS with Wide Output Voltage Range.

- Implementation of digital control laws on Arm Cortex M using embedded C.
- Switch mode power supply Electrical & Software Design, Integration and Testing.
- Switch mode power supply simulation using Matlab/Simulink, Spice and PSIM.

**September 2014 – September 2015**

Employer: **Surrey Space Centre,** Guildford, GU2 7XH.

Job Profile: **Systems and Avionics Engineer**

Contributed to two projects at Surrey Space Centre (SSC). The first project was Intrepid, a satellite AOCS test bed custom designed for Airbus Space and Defence and the DLR (German Space Agency). The second project was SME-SAT, a FP7 project that includes SMEs from the terrestrial sector on a space project allowing them to space qualify their technology. My duties at SSC included:

- Satellite On-Board Computer software development.
- Systems Engineering.
- Project Manager of SME-SAT.
- Provide technical support for the Space Vehicle Control group.
- Circuit design, assembly, integration and testing for space vehicles.

**May 2012 – August 2012**

Employer: **Airbus Defence and Space (Astrium Satellites)**,

Job Profile: **Intern Design and Evaluation of Electronic Circuits**.

Member of a small team specialising in motor control electronics for positioning solar arrays, antenna positioning for ground station communications and meteorological ground radar. My duties in APG14 included:

- PCB design, Assembly and test.
- Function testing and Debugging of engineering models and flight hardware, assisting senior engineers.

**May 2011 – January 2012**

Employer: **Airbus Defence and Space (Astrium Space Transportation)**,

Job Profile: **Intern Electronic development of International Space Station Payloads**.

Member of the payload design and development team that developed micro-gravity fluid physics experimental payloads which are destined for the fluid science laboratory on the International Space Station. My duties included:

- Embedded software.
- Conceptual work and verification.
- Electrical Design and Analyses.
- Technology and Performance Breadboard Laboratory Research and Documentation.
- Experimental Container Integration (mechanical, electrical and software) for the Parabolic Flight Campaign (Zero-G flight).

**June 2007- August 2009**

Employer: **Shannon Aerospace Ltd**., Shannon Airport, Ireland.
Job Profile: **Aircraft Maintenance Technician.**

Tasked with mechanical and electrical maintenance duties on Airbus and Boeing commercial aircraft. Duties were the inspection and function testing of the aircraft mechanical and avionics. Any non-conformance issues discovered was documented and corrected. My Duties included:

- Lean Manufacturing Project.
- Mechanical /Electrical and Avionics.

**1996 – August 2006**

Employer: **Morgan Precision Engineering Ltd**., Waterford, Ireland.

Job profile: **Managing Director** (2000 - 2006)
**Precision Engineer** (1996 - 2006)

Morgan Precision Engineering Ltd. specialised in Prototype and small batch Custom High Precision manufacturing. The company's customer base was multi-sectored and included Pharmaceutical, Biopharmaceutical, Medical Device, Aerospace and other High End / Value Engineering. Responsible for running all aspects of the business including:

- Project Management, Quotations, HR, Production Planning, Purchasing and Sales.
- Quality - Implementing ISO 9001:2000.
- Continuous Improvement program through lean manufacturing processes.
- Health and Safety.

Precision machining / Metrology over a ten year period (1996 – 2006) including:

- Setting up, programming and operating of CNC Milling Machines and Lathes, Working to exact tolerances up to 5 Microns.
- Using 3D CAD / CAM packages to design components.

## Education

**October 2013 - September 2014**

University: **University of Surrey**, Guildford, GU2 7XH, United Kingdom.
Course: **MSc. Space Technology and Planetary Exploration.**
Result: **Distinction.**

**September 2009 - May 2013**

University: **University of Limerick,** Limerick, Ireland.
Course: **BEng (Hons) Electronic and Computer Engineering in Robotics.**
Result: **1st Class Honours.**