Ryan Harvey

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Profile

Passionate and adaptable Software Engineer with skills in both mechanical and software engineering. Led unmanned aerial vehicle design team for three years. Founded and led an ambitious final year entrepreneurial engineering project to develop an educational computer kit. Received excellent feedback as a leader. Worked in the IT field for over two years with positive feedback. Moved to Spain and worked in a Formula Student team. Completed challenging Motorsport MSc at Cranfield University. Worked as a PhD researcher in vehicle dynamics. Moved from vehicle dynamics PhD to Systems Performance Modelling at Arm in Cambridge. Passionate about automobiles, computers, engineering, and innovation.

Work Experience

Arm Ltd
Graduate Modelling Engineer – Systems Performance Modelling
Main responsibilities: create, run, and analyse system models of current and future Arm IP; specifically, the interactions and performance characteristics of various models of real IP in a shared system with shared channels and memory bandwidth operating under various synthetic and realistic loads.

October 2020 –

- Ran and analysed models of future Arm IP including CPU, GPU, memory controller, etc
- Wrote plotting library for analysis of generated data
- Developed generic system level cache state save/restore sub-module
- Rotation working on writing benchmark code for the then upcoming SME Arm ISA extension
- Rotation working on benchmarking and aiding in the development of the Arm ISA target for the open-source auto-vectorizer VeGen

University of Calgary IT
Schulich School of Engineering IT Intern then IT Generalist (Part-time)
May 2014 – April 2016

- Worked to diagnose and solve IT issues on a variety of platforms
- Updated and maintained stand-alone Linux system to work correctly with new Windows domain
- Led meetings and helped to choose solution in replacing Linux to reduce maintenance cost
- Worked with SCCM to package and deploy software and operating systems
- Aided integrating Engineering IT with Deskside Services after IT restructuring

University Engineering Projects

PhD Research at Cranfield University
PhD Research project in autonomous vehicle dynamics control funded by EPSRC and working in association with the AID-CAV project. Project aim was to create a 1/5th scale platform to collect real-time data on the effectiveness of controller algorithms on a vehicle where the steering angle and torque output of all four wheels could be varied independently.

Provisional thesis title: Real-Time Implementation of Vehicle Dynamics Control Algorithms on a Scale Platform
September 2019 – June 2020

- Designed scale platform in CAD
- Performed FEA validation and optimisation of scale platform
- Selected servos, electric motors, and electric motor controllers
- Worked on positioning system for platform
- Worked on developing communication for offboard computation

UVigo Motorsport
UVigo Motorsport is a student lead and run competition team that designs and builds a formula-style racing car to compete in the Formula Student series of interuniversity engineering competitions.

Team Member, Electronics Department
October 2016 – October 2017

- Worked on automatic gear change control
- Developed programs to measure key engine sensors
- Aided in translation from Spanish to English

Nibble Knowledge
Nibble Knowledge is an entrepreneurial final year design project that developed an education computer kit where users can build every piece of a computer from simple electronic parts and learn how each part works at the circuit level.

Founder and Lead
September 2015 – April 2016

- Founded project with the idea of making a very simple computer kit for high school students and tinkerers
- Lead 15 people in a combination of marketing, documentation, software, and hardware teams
- Operated as a system architect, directing technical decisions at both hardware and software levels
- Operated as a software team member, wrote build scripts and an assembler
- Excellent peer reviews from team members

Schulich AeroDesign
Schulich AeroDesign designs and builds an unmanned aerial vehicle for an engineering competition where the goal is to produce a vehicle that can lift the most weight into the air.

Vice President of Design and later President
September 2012 – August 2015

- Took greater responsibility as needed to continue team success
- Designed two planes from the ground up
- Created CAD models in Solidworks
- Performed FEA analysis of the structure in AutoCAD Inventor

Skills

Languages:
Spanish: Intermediate (B2)

Programming/Markup languages:
Good Proficiency: C/C++, Bash, Python
Moderate Proficiency: JavaScript, CSS, Matlab, HTML, Java

Development tools:
Good Proficiency: Git, Makefiles

Computer-assisted design tools:
Good Proficiency: SolidWorks, Autodesk Inventor
Moderate proficiency: AutoCAD, CATIA

Education

Master of Science in Advanced Motorsports Mechatronics
Graduated October 2019
School of Aerospace Transport and Manufacturing, Cranfield University (United Kingdom)
Thesis: Development of a Software Architecture for a Scale Autonomous Limit Handling Platform

Bachelor of Science in Software Engineering Internship Program with Distinction
Graduated April 2016
Schulich School of Engineering, University of Calgary (Canada)

References available upon request