Ryan Harvey

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Profile

Experienced engineering student with skills in both mechanical and software engineering. Led unmanned aerial vehicle design team for three years. Founded and lead 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 and was asked to stay on after internship part-time due to good performance. 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. Passionate about automobiles, computers, engineering, and innovation.

University Engineering Projects

PhD Research at Cranfield University
PhD Research project funded by EPSRC, working in association with the AID-CAV project, in order to produce solutions for autonomous vehicle dynamics control that will ensure that future autonomous vehicles are able to perform emergency manoeuvres effectively and safely. Specific aim of personal project was to create a 1/5th scale platform to collect real-time data on the effectiveness of developed controllers on a multi-actuated 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 localisation 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. The goal is to build the fastest car while being within certain strict design parameters and tightly controlling building costs.

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 seeks to develop an education computer kit for tinkerers and teenagers. Users are able to 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 held in the United States by the Society of Automotive Engineers (SAE). 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

Work Experience

University of Calgary IT
Schulich School of Engineering IT Generalist (Part-time)
September 2015 – April 2016

- Was asked to continue employment part-time during school due to previous performance
- Aided integrating Engineering IT with Deskside Services after IT restructuring
- Continued to work with full course load in second semester

Schulich School of Engineering IT Intern
May 2014 – September 2015

- 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

Skills

Languages:
Spanish: Intermediate (B2)

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

Development tools:
Good Proficiency: Git, Makefiles

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

Education

PhD Candidate Researcher in Transport Systems
September 2019 – June 2020
School of Aerospace Transport and Manufacturing, Cranfield University (United Kingdom)

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