

Joe Barrett

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in joebarrett401

Education

Edinburgh Napier University
September 2013 - Present

BEng(Hons) Software Engineering
Predicted 1st

University of the Highlands and Islands
September 2012 - May 2013

HNC Computing
Pass

Major Projects

Dissertation - Calculation of Mountain Bike Suspension Setup through Mobile Image Analysis:

- In Progress
- Use of image analysis and user supplied information to calculate optimal suspension settings
- Building mobile application for Android platform
- Using Open CV library image processing library
- Languages: Java, C++

Helmet Crash Sensor - Awarded 95%:

- Created helmet mounted device and accompanying Android application
- Detection of certain criteria signals a crash and sends SMS to emergency contact
- Use of 3D trigonometry to calculate orientation using accelerometer and gyroscope data
- Teensy 3.2 microcontroller used for control
- C++ used for embedded code

Mountain Bike Suspension Data Logger - Awarded 76% Device, 88% App:

- Device to capture suspension data and suggest changes to improve performance
- Used ultrasonic range sensor for measurement
- Data processing algorithms created to calculate adjustment
- Split between two modules
- Awarded Baillie Gifford student prize for application development

Employment

Cadence Design Systems

Intern

May 2016–September 2016, Livingston

- Maintaining and adjusting performance tests for Virtuoso software
- Wrote performance testing suite in Python, including automated emailing, data analysis utilities, and automated debugging
- Notified engineers on failing tests and assisted in debugging
- Created performance tests to compare product platforms using Cadence's SKILL language
- Presented during internal conference for interns and summary of work at end of internship

Edinburgh Napier University

Student Demonstrator

January 2016–May 2016

- 2nd year Mobile Applications Development
- Assisting lecturer during practical sessions
- Answering questions from students related to mobile programming
- Presented during lecture on previous year's coursework

C&G Cycles

January 2014–January 2015, Edinburgh

Assistant Manager and Mechanic

Twelve50 Bikes

April 2011–June 2012 & May 2015–August 2015, Frodsham

Workshop Manager and Sales Assistant

Cheshire Oaks Cycles

March 2010–April 2011, Ellesmere Port

2nd Mechanic and Sales Assistant

Graham Weigh Cycles

October 2007–June 2009, Queensferry

2nd Mechanic and Sales Assistant

Skilled Training

Cycle Scotland

April 2016, Edinburgh

Cycle Assistant Qualification

Coed y Llandegla Courses

February 2011, North Wales

CTC Trail Leader Qualification

Whistler Blackcomb

August 2009, Whistler, Canada

Instructor Development Programme Level 1&2

Institute of Leadership and Management

August 2009, Whistler, Canada

Level 3 Award

Cycle Wales

October 2007, North Wales

City and Guilds: Cycle Maintenance

Skills Profile

Languages.....

Java: Intermediate

Classes, Multithreading, Design Patterns, Swing

Python: Intermediate

Lambda Functions, List Comprehensions, Subprocesses

C: Basic

Arduino Libraries

C++: Intermediate

Classes, Header Files, Pointers, Multithreading, Memory Management

C#: Intermediate

Classes, WPF Applications, Linq

Android: Intermediate

Activities, App Lifecycle, Camera, Sensors

Bash/CSH: Basic

Automation Scripting

General Computing.....

Command Line: Everyday usage

Version Control: Git, Perforce

Networks: Basic knowledge

Hardware: Arduino, Sensors, MOSFET

Interests and Achievements

- **Mountain Biking** 12 years experience, Competed in multiple races, Volunteer with Sustrans
- **Motorsports/Transport** Formula student, Watch WEC and Rally, Follow self driving technology
- **Science/Tech** Up to date with news and products, Space travel, Watch event streams