Joe Barrett

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Education

Edinburgh Napier University	**BEng(Hons) Software Engineering**
2013–Present	*Predicted 1st*
University of the Highlands and Islands	**HNC Computing**
2012–2013	*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

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 confrence 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   **Assistant Manager and Mechanic**
January 2014–January 2015, Edinburgh

Twelve50 Bikes   **Workshop Manager and Sales Assistant**
April 2011–June 2012 & May 2015–August 2015, Frodsham

Cycle Wales   **City and Guilds: Cycle Maintenance**
October 2007, North Wales

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