

# Joe Barrett

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in joebarrett401

## Education

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**Edinburgh Napier University**  
2013–Present

**BEng(Hons) Software Engineering**  
Predicted 1st

**University of the Highlands and Islands**  
2012–2013

**HNC Computing**  
Pass

## Major Projects

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### 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

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### 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**

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### **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**

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### **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**

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- **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