

# Curriculum Vitae – Benjamin Howe

## Work

**The University of Reading (Student Demonstrator – September 2017 to November 2017):** I have recently started helping with various first and second year lab sessions<sup>1</sup>. My role is to “sign off” marks, as well as resolving issues with lab hardware / software and helping answer any questions students may have.

**Junction11 Radio (Head of Technology – January 2016 to November 2017):** I was responsible for developing, documenting, and maintaining the technology stack. I assisted University IT services in enabling IPv6 throughout the studio and set up a new webcam system to serve images over HTTPS using LetsEncrypt.

**Krystal Hosting (Software Engineer – May 2017 to July 2017):** Initially I spent my time helping with the support team. I then identified several repetitive requests and developed automated self-service tools, helping clients resolve their own issues faster and reducing the workload of the support team. I also built a prototype pfSense-based firewall to replace existing Palo Alto firewalls, and created an IPv6 addressing plan.

**American Express (Technologies Analyst – June 2016 to August 2016):** I taught myself how to use the Elastic Stack for monitoring and became an internal expert – I then helped run an internal “Hack Day” to help colleagues utilise the Elastic Stack themselves. Within a Loyalty and Partnerships Scrum team, I created a dashboard using bespoke plugins to monitor compliance with SLAs. I worked with various teams to progress my work through dev and test environments into production, so it could start delivering value to the business.

**Goldman Sachs (Spring Intern, Technology Division – April 2016):** I worked on a project with a diverse team to complete the analysis and design for converting a desktop application to iOS, presenting our findings to peers and more senior colleagues. My team were joint winners out of our cohort for this presentation. I also shadowed roles in various business units within technology, and attended senior leadership discussions.

**Mythic Beasts (Software Developer – July 2014 to July 2015):** I gained a wide variety of experience, from on-site hardware maintenance to operating customer support queues. I also participated in the on-call rota for serious faults occurring out of hours. After noticing repeat spam incidents involving outdated WordPress blogs I wrote a modular Perl script to detect WordPress blogs with unpatched security holes. This resulted in a number of old blogs being updated, and ultimately saved staff time removing IP addresses from blacklists. I also led a research project<sup>2</sup> into the use of HHVM to improve the performance of a high-profile WordPress blog.

**Wolfpack Fashion, a branch of Young Enterprise (Director of IT – September 2012 to July 2013):** My responsibilities included managing customer communications, setting up and maintaining the website and online store, and dispatching orders. We were one of the only Young Enterprise companies to set up a PCI-DSS compliant card payment system, allowing us to take online orders with ease. Wolfpack Fashion won "Best Young Enterprise Company" in Kent, as well as "Best IT" and "Best Young Enterprise Company" in West Kent.

## Education

University	<b>2015 – 2018: The University of Reading – First Class (first &amp; second year grade)</b> BSc Computer Science (BCS accredited) Course representative, Staff Student Liaison Committee chair (October 2016 to present) Course highlights: <ul style="list-style-type: none"><li>• Codes &amp; Code Breaking</li><li>• Neural Networks</li><li>• Programming (C / C++ / Java)</li></ul> Won the award for Best Media Committee Member (2017, Head of Technology, Junction11)
A Levels	<b>2012 – 2014: Tunbridge Wells Grammar School for Boys</b> Computing – A, Physics – B, Mathematics – C, General Studies (AS) – A Extended Project (“ <i>A ciphertext-only attack on classical substitution ciphers in Python</i> ”) – Distinction AQA Baccalaureate – Merit Won awards for IT (2014) and for effort in General Studies (2013)
GCSEs	<b>2010 – 2012: Tunbridge Wells Grammar School for Boys</b> 10 GCSEs (4 A*, 3 A, 2 B, 1 C) including an A* in Mathematics and an A in English

<sup>1</sup> including Computer Architecture / ARM assembly programming and C programming

<sup>2</sup> <https://blog.mythic-beasts.com/2014/11/14/hiphop-and-wordpress-if-youre-tired-of-tea-then-youre-tired-of-life/>

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## Projects

**YAMM (2017 – still in progress):** For my final year project, I am creating a money manager tool to help individuals manage multiple accounts well. A client application (written in Java) will be used to securely handle credentials and to perform aggregation. A web page (written in HTML / JavaScript) will be used for data visualisation. This approach is being used to maximise security and cross-platform operability.

**The Software Engineering Games (2015-16):** The Software Engineering Games is the culmination of a year-long assignment as a small team to create a paper-based board game designed to teach software engineering. I was elected team leader, and improved my ability to work with diverse groups and to manage large projects. As a team, we had to work to briefs and provide documentation which matched specification and was on-time.

**Library API (2015-16):** I wrote a Python module to interact with various library systems – currently SirsiDynix Enterprise and WebPAC Pro. It allows programmatic access to the library and the user's account – for example, all library books could be renewed every morning to prevent overdue books and fines. I spent time at BrumHack 4.0 working on it with a friend, and as a result we won GitHub's "Best Developer Tool" award.

**Young Rewired State (2014, 2015):** Young Rewired State is a hackathon for under-18s, where participants create projects at centres around the UK in a few days. In 2014 I reached the semi-finals with "Explain To Us", a website designed to ask parliamentarians to upload a short video "explaining" bills they put before parliament. The feed of bills was regularly scraped and then parliamentarians emailed when new bills were published. In 2015 I created "Finance API", a Python module designed to interact with financial accounts. Although there were existing solutions, they were all web-based, so required giving financial security details to third parties. I also wrote a small program which used my API to aggregate multiple bank accounts into one combined statement.

**OCR Computing (2012-14):** When starting my OCR A-Level Computing course, I was disappointed with the lack of high quality revision materials that were available. To solve this, I created a website and wrote textbook-like content to help other students revise, optimised it for search engines, and set up Google AdSense so the website was self-sustaining. As of October 2017 the website has been viewed approximately half a million times by approximately 85,000 unique users across over 150 countries.

**Extended Project (EPQ) (2013-14):** As a result of previous involvement in the National Cipher Challenge, I decided to write my EPQ on cryptography. I learned a lot about parallel processing and how to conduct and reference research (both primary research and reading from academic libraries).

## Wider Community Involvement

**R.U. Not Drinking Much? (currently President – October 2016 to present):** As a committee member of R U Not Drinking Much?, I help to organise regular social events (both on and off campus) which don't involve alcohol. As a result of my achievements on the 2016 committee, I was elected president of the 2017 committee.

**R.U. Hacking? (Treasurer – November 2016 to May 2017):** I built relationships with various organisations to enable our events to be free to attendees, as well as to fund meals and prizes. Winners at previous a previous event have included a Markov chain twitter bot and a new programming language created with rust.

**Boys' Brigade (currently ranked Lieutenant – September 2010 to present):** From the age of 5 I progressed through the whole of Boys' Brigade. I really looked up to some of the leaders and hope that I am able to be a similar role model to the next generation. I was awarded "Boy of the Year" twice in a row by 2<sup>nd</sup> Tonbridge Boys' Brigade, in 2013 and 2014. I now volunteer at 2<sup>nd</sup> Reading, both on regular evenings and at residential events.

**FIRST Stop Bus (Volunteer – September 2015 to present):** The FIRST Stop Bus initiative aims to reduce attendances at A&E by helping injured night-revellers on the street. I regularly volunteer, helping the paramedic and interacting with our "customers", as well as coordinating via radio with police, door staff, and street pastors.

**tbcKids (Club Sunday Sound Engineer – September 2012 to July 2015):** I taught myself to use the equipment and sound-check various instruments, due to the abrupt departure of the previous volunteer. As a result the sound setup grew from a single rackmount mixer with a couple of radio mics to a full on-stage band. I also helped design bespoke setups for off-site events. In April 2017 I will return to lead tech at a weekend away.