

Edwin Balani

Engineering student at Cambridge University

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Education

2016–2020 **Magdalene College, University of Cambridge.**

MEng and BA(Hons) in Information & Computer Engineering

Currently in third year of a four-year course.

Having completed two years of study in all engineering areas with auxiliary subjects (economics, business) and practical group design projects, I'm specialising my degree towards Information Engineering (control theory, signals & signal processing, data & communications, inference), with a helping of Electronic Engineering modules (RF electronics and Integrated Digital Electronics (VLSI, FPGAs, logic design, etc.)).

2009–2016 **King Edward's School, Birmingham.**

International Baccalaureate (IB) Diploma

○ Scored 43 points out of 45, equivalent to 4–5 A* grades at A Level

Higher Level:	Mathematics (7)	Physics (7)	Chemistry (7)
Standard Level:	French (7)	Economics (6)	English Lit. (6)

Diploma Core work: Extended Essay in Physics (A), Theory of Knowledge (A). Two A grades in Core together contribute 3 points (the maximum) to overall points total.

GCSEs/IGCSEs

10 subjects, grade A*

Includes Mathematics, Physics, English, French, and Design & Technology (Systems and Control)

Past employment & work experience

Jul–Sep 2018 **Software engineer intern, StarLeaf Ltd.,** Great Shelford (near Cambridge).

- Implemented a baseline JPEG encoder with adjustable quality factor
- With heavy reference to the H.264 specification, started a from-scratch implementation in C of context-adaptive binary arithmetic coding (CABAC) for StarLeaf's H.264 codec

Jul–Sep 2017 **Converged Networks Research Intern, BT Research & Innovation,** Adastral Park, Ipswich.

- Broke ground on BT's first research into Arm-based network function virtualisation (NFV) solutions
- Architected and deployed a virtualised cloud network performance testing environment
- Gained experience with Terraform, OpenStack, Open vSwitch, Open Platform for NFV (OPNFV)

Jul–Aug 2016 **Administrative assistant, Noble Dental Practice,** Sutton Coldfield.

- Summer job working in administration and IT for a small NHS dental practice
- Duties involved taking inventory, ordering new supplies and computer hardware/software upgrades

Oct 2015 **Work experience student, Rolls-Royce Controls & Data Services,** Hall Green (Birmingham).

- Carried out failure mode and effects analysis (FMEA) on electronic circuits
- Assisted in engine control unit (ECU) software testing
- Learnt about PCB manufacturing processes and safety-critical engineering practices

Technical skills

Languages Strong in Python and C. Often working in HTML and CSS for web development, and handy with PHP and shell scripting. Some experience with Go and C++.

**Networking/
other tech** Working knowledge of DNS, HTTP, TCP/IP, SMTP. Experience with PostgreSQL and MySQL. Understanding of Internet architecture and the OSI model.

Computing Debian Linux user on my laptop, and administer a few dozen Debian & Ubuntu servers. Experience with XenCenter, OpenStack, AWS, Google Cloud for virtual computing. Experience with Buildbot for continuous integration (CI).

- CAD Comfortable with 3D and electrical CAD packages — trained in parametric design with Creo; experience with Altium Circuitmaker and KiCAD.
- Office Comfortable using Microsoft Office and LibreOffice suites. Heavy user of \LaTeX for papers and CVs.

Personal projects

- `ucam-wls` A Python library implementing Cambridge University's homegrown WAA2WLS protocol for single sign-on. I'm writing this with a view to making it available on the SRCF (see below), so that people can use SRCF credentials to log into services. <https://github.com/edwinbalani/ucam-wls>
- Web dev. Juggling a few website projects for friends or Cambridge-based groups, working solo or in a pair:
 - SolidariTee, a student-led charitable organisation raising money to help refugees. Static site, with a view to moving to Wagtail CMS in the near future. <https://www.solidaritee.org.uk/>
 - Varsity, Cambridge's student newspaper. Custom PHP site. <https://www.varsity.co.uk/>
 - Cambridge University Eco Racing, a student-run solar car team. WordPress site with a customised 'house style' theme. <https://www.cuer.co.uk/>
 - My personal website. Static site, with Sass/SCSS for styling. <https://www.balani.xyz/>
- Self-hosted I run my own mail server, and another server to host my website, offer a VPN service when on the road, act as a shadow DNS master for multiple domains, back up my files, and connect to IRC.

Hobbies & activities

- SRCF Volunteer system administrator for the Student-Run Computing Facility (SRCF), a society in Cambridge University that offers free computing services (shell access to an Ubuntu server, email, web hosting, databases, file storage, mailing lists etc.) to thousands of societies and individuals. Sysadmin responsibilities are diverse and include user support over email and ongoing system maintenance in both hardware and software. I act as de-facto postmaster, recently migrating our mail system's running configuration away from decoupled flat files to full integration with our existing user database.
- CUER Part of the Electrical/Software team in Cambridge University Eco Racing, a student-run solar car team. I maintain our continuous integration (CI) setup, built on Buildbot and integrated with our GitHub repositories to cross-compile every commit of the embedded software repository.
- Music/sports Practise piano when I get a chance, having done Grade 8. Player/webmaster for College pool team.

Positions held

- 2018– **Faculty Board representative & SSJC year-group rep**, CU Engineering Department.
An elected undergraduate representative sitting on the Faculty Board of Engineering, the Department's highest committee, which reports to the University's General Board. Also (separately) a third-year representative to the Staff-Student Joint Committee (SSJC), which concerns itself with the improvement of student experience, welfare, and facilities in the Department. I hold these offices for one year from November 2018.
- 2017– **Web Developer**, Varsity.
Part of the editorial team at *Varsity*, Cambridge University's independent and oldest student newspaper.
- 2017–2018 **IT Officer**, Magdalene College JCR (undergraduate students' union).
Worked to improve the undergraduate experience in College using technology, e.g. creating an anonymous welfare contact form, running the JCR website, pressing for good Wi-Fi around college, and representing JCR in IT Committee meetings. Provided technical support to students, and helped run social 'bop' nights.

Awards & scholarships

- 2016–2020 **IET Diamond Jubilee Scholarship**, supported by BT.
Awarded annually to 100 students starting an undergraduate engineering course in the UK.
- 2014–2016 **Arkwright Scholarship**, supported by Controls & Data Services.
Awarded in Sixth Form in recognition of future leaders in engineering.

Skills & other qualifications

French language: working proficiency (CEFR B2/C1 level). Driving: full, clean UK car licence