

Edwin Balani

Engineering student at Cambridge University

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Education

2016–2020 **University of Cambridge.**

BA (Hons) MEng in Engineering

Currently in second year of study. The curriculum for the first two years is a broad range of engineering areas including Mechanics and Fluid Mechanics, Thermodynamics, Structures, Material Science, Electromagnetics, Electronics, Mathematics, Computing and Business Economics.

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

International Baccalaureate (IB) Diploma

o 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 2017 **Converged Networks Research Intern**, *BT Research & Innovation*, Adastral Park, Ipswich.

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

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

- o Summer job working in administration and IT for a small NHS dental practice
- o 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).

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

Aug 2015 **'Praktikant'**, *Svenska Rotor Maskiner AB*, Nacka, Stockholm.

- o Fixed program used to generate milling coordinates from adjustable parameters
 - Learnt Fortran 77 to work on the legacy code used for numerical calculations
 - Had to cross-refer to original paper copies of technical documentation to help understand code
 - Tackled language barrier: comments and documentation were in technical Swedish
- o Developed a GUI in VB.NET for the console-based Fortran program

Jul 2014 **Work experience student**, *Delcam plc (now part of Autodesk)*, Small Heath (Birmingham).

- o Quickly learnt PowerSHAPE CAD software and its macro language
- o Updated PowerSHAPE unit test suite to use an improved replacement for an older software feature

Technical skills

Programming Confident in Python, comfortable in C and C++. Past experience with C# and Java. Trying to learn more in web-oriented/IoT technologies (JavaScript, MQTT, making good RESTful APIs), HTTP. Learning some Rust and Go when I get the chance.

Networking Understanding of TCP/IP, the OSI model, DNS. Experience with Open vSwitch and Cisco-like router console interfaces, OpenVPN, iptables, ufw. A grasp on how MPLS and the PSTN work.

- CAD Recent experience with Creo and KiCAD. Past experience with Delcam/Autodesk PowerSHAPE.
- Computing Linux Mint (on desktop) and Ubuntu (on headless servers) user. Very comfortable at the shell prompt. Experience with OpenStack and orchestration tools e.g. Terraform.
- Office Comfortable using Microsoft Office and LibreOffice suites. Handy with \LaTeX .

Hobbies, projects & interests

- ALiBI Standing for **A**utonomous **L**ine and **B**all Identification, I wrote ALiBI in C++ for the Integrated Design Project, part of the second year curriculum, where 6-person teams design and build a prototype autonomous robot to carry out a spatial navigation and object classification task. Navigation was by line following with IR sensors. Robot paths were generated dynamically and low-level routines (line following, sensor reading etc.) abstracted into instructions like 'go forward for 2 junctions'.
- Phoenix Creating a new web presence for Cambridge University Engineering Society, where I am currently webmaster. The project is codenamed Phoenix, symbolic of new beginnings. Using Python and Django with Postgres, all running on AWS Elastic Beanstalk. Initial launch (with the same feature set and functionality as the existing site) is projected for early January.
- SRCF CPanel A long-running project to provide a self-service admin control panel to users of the SRCF.
- Electronics Part of the Driver Controls team in Cambridge University Eco Racing, a student-led solar car team.
- Web dev. Pursuing personal side projects, currently including an iCalendar parser/beautifier and webapp
- Music/sports Play piano (grade 8) for pleasure. Vice-Captain and Webmaster for College pool team.

Positions of responsibility

- 2017– **System Administrator**, Student-Run Computing Facility (SRCF).
Volunteer sysadmin for a society in the University that offers free computing services (web hosting, databases, file storage, mailing lists etc.) to thousands of societies and individuals. <http://www.srcf.net>
- 2017–2018 **Webmaster**, Cambridge University Engineering Society (CUES).
As part of a two-person team, maintain the Society's web presence — web hosting, domain name, Google Apps (Gmail, Calendar, Drive). Also working on Phoenix (see above).
- 2017 **IT Officer**, Magdalene College JCR (undergraduate students' union).
Continually improving the undergraduate experience in College using technology, e.g. creating an anonymous welfare contact form, ensuring good Wi-Fi coverage in accommodation, and representing JCR in College IT Committee meetings. Maintain the JCR website. Provide occasional technical support to students when appropriate and help to run JCR-organised 'bop' nights.

Awards and scholarships

- 2016–2020 **IET Diamond Jubilee Scholarship**, supported by BT.
Awarded annually to 100 students starting an undergraduate engineering course in the UK.
- 2016/17 **Part 1A Computing 'Guru' Prizes**, *won twice, once per academic term*.
Awarded to the most helpful people on the online Part 1A (first year) Computing peer support forum.
- 2014–2016 **Arkwright Scholarship**, supported by Controls & Data Services.
Awarded in Sixth Form in recognition of future leaders in engineering.

Skills and achievements

- Languages French: working proficiency (CEFR B2/C1 level)
- Driving Full, clean UK car licence

Referees

Academic, personal, professional references; I am happy to provide contact details on request.