

IET Diamond Jubilee Scholarship



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How did you first hear about the Institution of Engineering & Technology (IET) and the IET Diamond Jubilee Scholarships?

I came across the IET when I was researching the engineering profession, prior to deciding which degree courses I wanted to apply for. Further investigation led me to the section on the Diamond Jubilee Scholarships. I also heard about the IET via the Arkwright Scholarships Trust.

What did you study at school and how did you do e.g. what grades did you get, what did you enjoy?

At A Level I studied Maths, Further Maths, Physics, Chemistry and General Studies, and achieved 3 A*s and 2 As respectively.

In addition, I was awarded an A in my Level 3 Extended Project Qualification, where I investigated the question "Will we ever have truly Artificially Intelligent Machines and what would the Implications be for Society". I chose this topic as the relevant technology is only just beginning to bridge the gap between science fiction and reality, yet there are also many ethical and moral issues involved. I contacted and met with both Professor Murray Shanahan of Cognitive Robotics at Imperial College London and Dr John Murray of Computer Science at The University of Lincoln to discuss recent advances in the field.

At GCSE Level I achieved 10 A*s and 2 As. I also undertook an early AS Level in Science in Society at the same time as my GCSEs, in which I achieved a B.

I have always loved Maths and Physics, and from an early age I found it thrilling to gain deeper understanding of the physical laws that underpin how our world works. I found myself looking forward to the Mechanics modules in

Maths, as I enjoyed being able to take the knowledge I had gained previously in Core Maths and Physics, and apply it to solve problems that related more to real-life scenarios.

What made you choose your university degree course? Tell us more about your university degree e.g. what modules are you looking forward to, do you have a gap year?

I was attracted to the MEng General Engineering course at Durham University due to the fact that it is broad-based for the first two years, and then specialises in the final two. This will give me the opportunity to gain experience of different engineering disciplines prior to deciding which I would like to pursue exclusively, and hence help me to make an informed choice about my future career path. I also think that this route will be hugely beneficial in the future when I may find myself working on multidisciplinary projects as part of a team with a varied skillset. I would then be able to understand how the different areas of engineering relate to each other, rather than being focused solely on one particular speciality.

Although during the first year there are 5 compulsory engineering modules, the 6th is a free-elective, and I have chosen to study 'Introduction to Astronomy'. I am currently enjoying all of my modules so far, which is making it difficult to forecast which one I will choose to study individually in two years' time!

How will the scholarship help you during your studies?

Having an IET Diamond Jubilee Scholarship will help me to connect with other like-minded engineers on a national scale, providing me with additional intellectual and practical support throughout my course.

The sponsorship money will offset the need for me to find a job during term time at university, giving me more time to focus on my studies and projects. Additionally, the financial support will help me with transport and accommodation costs during industrial placements and engineering events. It will also allow me to invest in more resources to aid in my studies, such as text books, journals and specialised software.

Who/what does/has inspired you and why?

The first person to introduce me to the engineering world was my GCSE Electronics Teacher, Mr Ben Price, at William Farr Comprehensive School. I chose to study Electronics for GCSE because I enjoyed it, rather than considering it as a path to a future career. However, as time went on, I found that I relished playing a part in each stage of the design and realisation of my project, going from no more than an initial concept and sketch, to a CAD

model and *Circuit Wizard* simulation, and then finally a fully working product. Mr Price made the subject fascinating, and encouraged me to apply for an Arkwright Engineering Scholarship, which I was then awarded the following summer, with Rolls-Royce as my sponsor. He also organised our school's participation in the Engineering Education Scheme, where our team worked with EDF Energy. It was his dedication for his subject that helped to persuade me to pursue a lifelong career in engineering.

How will you keep involved with the IET?

I believe that engineering is not championed as much as other scientific and related professions at secondary school level, particularly prior to students choosing their GCSEs, where certain decisions could potentially direct them away from an engineering career very early on. I would love to have the opportunity to work with the IET to promote engineering as a viable career path to pupils at this level, and showcase the exciting possibilities available in engineering.

What are your hobbies outside of studying?

I have always found sport to be a great way to relax and keep fit. Before starting at Durham University I played regularly in a tennis squad, and over the past two years I have helped to coach one of the younger classes. I also enjoy skiing and swimming, and during my A2 Level year I worked part-time as a lifeguard with David Lloyd Leisure.

I also enjoy playing the piano, and I have achieved Grade 5 with Merit as a result.

At university I have joined one of my college's football teams, where we play regularly in an intercollegiate league. I have also joined the college tennis club, play on the college's highest ranking table tennis team, and have started university fencing as well.

While at school I participated in a number of outreach projects, including tutoring a younger pupil in Maths during my A Levels. I am looking forward to taking this to the next level at university, where I have volunteered for the university's 'one-on-one' tutoring project, where I will be supporting a local student with their A Level Maths.

Would you like to add a quote to your case study?

I really liked this description of the engineering profession by Herbert Hoover, which I came across when reading Natasha McCarthy's book *Engineering*. It goes as such:

"It is a great profession. There is the fascination of watching a figment of the

imagination emerge through the aid of science to a plan on paper. Then it moves to realisation in stone or metal or energy. Then it brings jobs and homes to men. Then it elevates the standards of living and adds to the comforts of life. That is the engineer's high privilege."

Would you like to add anything else to your case study e.g. a summary of your achievements so far?

In addition to my academic career, and being awarded an IET Diamond Jubilee Scholarship, I am proud to have achieved and participated in the following:

- Awarded an Arkwright Engineering Scholarship, sponsored by Rolls-Royce plc (2013).
- Awarded the Lincolnshire Media Education Award for Science and Engineering (2015).
- Awarded the Lincolnshire Media Education Award for Secondary School Pupil of the Year (2015).
- Achieved a Gold CREST Award (2015).
- I had a week of work experience with Rolls-Royce plc in Derby in summer 2014, where I gained valuable experience in modelling turbine engine parts using CAD software.
- I spent 8 weeks in the summer of 2015 working full time at PCA Engineers Ltd. My job was to use CFD and CAD software to calculate the efficiency of different radial turbine designs, and then analyse the results.
- I took part in the Engineering Education Scheme, where our school team was partnered with EDF Energy.
- Attended a week-long Headstart Engineering Course at Imperial College London (2014).
- Elected as one of the two Level 1 Engineering Course Representatives at Durham University.
- Achieved the Bronze, Silver and Gold Duke of Edinburgh Awards.
- In 2013 I was presented with the RAF Red Arrows Award for achieving the highest GCSE grades profile in my school year.
- In 2014 I completed a 3 week long Outlook Expedition to Nicaragua and Honduras, part of which included building a classroom in a Nicaraguan school and a 4 day volcano trek.

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