James Tavernor

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enquire for additional contact information

Education

2016 – 2020 **MEng Joint Honours Mathematics and Computer Science**, *Imperial College London*, *Current Average 65%*.

2014 – 2016 **A level**, *St. Ambrose College*, *Hale Barns*, ***A**** *- Maths,* ***A**** *- Further Maths,* ***A*** *- Physics*.
With an additional AS level in Computing at grade **A**.

2009 – 2014 **GCSE**, *St. Ambrose College*, *Hale Barns*, *3* ***A**s, 5* ***A**s, 3* ***B**s*.

Technical Skills

- **Programming Languages**
  Java, C, JavaScript, SQL, PHP, Bash, Haskell and Assembly.
- **Web Technologies**
  Nginx, NodeJS, Angular 6, Keycloak and Spring Boot.
- **Other Technologies**
  Git, UNIX, Windows, Docker, MSSQL, PostgreSQL and Jenkins.

Experience

Summer 2018 **3 Month Intern - Application Security Software Engineer**, *The Hut Group*, *Northwich*.
Worked as part of the Application Security team doing security related software development.

- **Security Hub**
  Developed an internal web tool to automatically report on potential vulnerabilities throughout The Hut Group's codebase/network and automatically provide advice to developers as they work. This was developed in *Spring Boot* and *Angular* with *Keycloak* Integration, *MSSQL*, *SonarQube*, *Nginx* and *NodeJS*.
- **Magellan**
  Built a system of intercommunicating components to scan the entirety of The Hut Group's network from an external source to detect potential network vulnerabilities, and to report these vulnerabilities (as a nicely formatted *LaTeX* document) or even try to exploit them. The components were built in *Spring Boot* using *ActiveMQ*, *Apache Camel* and *PostgreSQL*.

Summer 2015 **Work Experience Placement - Web Developer**, *Hallnet*, *Warrington*.
Worked at a bespoke web development company and developed internal tools (in *PHP* and *JavaScript*).
Attended meetings to gather and suggest features from the client.

Projects

- **ReSecure WebApps Project**
  Second year group project writing a WebApp for helping teach website security using *dockerised* insecure websites. Written primarily in *PHP* and *JavaScript*.
- **Computational Linear Algebra Project**
  Second year individual mathematics coursework involving creating a *Java* program to perform the classical and modified Gram-Schmidt algorithms and writing a *LaTeX* report showing the algorithms perform as expected but with some loss of accuracy with small numbers.
- **WACC Compiler**
  Second year group project. A compiler for the WACC language made using *ANTLR 4* and *Java*.

- **Computing Topics Project**
  First year group project researching home robotics and producing an educational and interesting website which

conveys the complex research papers in a concise and understandable manner for everyone. Took on the role as group leader in the project and the team was awarded an Award for Outstanding Computing Project.

- **Heatwave**
  Developed in a team at ICHack16. An android app that uses machine learning to try to create a map displaying the overall sentiment towards a given topic by region made using *Java* and *Python*.
- **ARM 11 Emulator and Assembler**
  First year group project written in the *C Programming Language*. An emulator for the *ARM 11* architecture as well as an assembler.

Modules Studied

First Year

- **MC113** Architecture
- **MC140** Logic
- **MC141** Reasoning about Programs
- **MC120** Programming
- **M1J1** Applied Methods and Linear Algebra
- **M1J2** Algebra and Analysis
- **M1F** Foundations of Analysis
- **M1M1** Mathematical Methods I
- **HSCS1004** Introduction to Philosophy

Second Year

- **MC202** Algorithms II
- **MC231** Introduction to Artificial Intelligence
- **MC240** Models of Computation
- **MC211** Operating Systems
- **MC220** Software Engineering Design
- **M2AA3** Introduction to Numerical Analysis
- **M2AA2** Multivariable Calculus
- **M2S2** Statistical Modelling
- **M2SJ** Statistical Methods

Achievements

2017 **Award for Outstanding Computing Project** - During first year at Imperial College I was the group leader for a 10-week project which involved researching a topic within computing and creating an educational website with references on our chosen topic which we then presented. We received an award for one of the most outstanding projects in computing 2017.

2016 **Sixth Term Examination Paper (STEP) Mathematics I** - Grade 2.

2016 **Sixth Term Examination Paper (STEP) Mathematics III** - Grade 3.

2016 **Cosgrove Award for Sixth Form Academic Excellence**

2014 **UKMT Senior Challenge** - Gold Award and Best in Year Award.

2013 **UKMT Intermediate Challenge** - Bronze Award.

2013 **Mathematical Education on Merseyside Challenge** - Consolation Prize.

Extra-Curricular

- **Microsoft Student Partner**
  Part of the team of UK Microsoft Student Partners at Imperial College. Wrote an informative blog to help people host websites with SQL on Microsoft Azure. Assisted with 3Hack 2017.
- **Music**
  Achieved Grade 4 in piano and play the trombone in school bands, ensembles and orchestra. Also took part in the music tour of Germany whilst at St. Ambrose College.
- **Programming**
  Enjoy programming as a hobby and have taken part in hackathons and have enjoyed studying courses from stackskills to broaden my programming ability and undertake my own projects in any free time.