

# James Grant

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## Education

**Imperial College London** 2013 - 2017

MEng in Computing and Artificial Intelligence.

**CoIDE** 2016

- [github.com/JCGrant/CoIDE](https://github.com/JCGrant/CoIDE)
- A real-time, collaborative, development environment.
- Put myself forward as project leader.
- Wrote most of the backend, the websocket communication layer, and designed the user interface.
- Responsible for deploying the application, using Dokku.

**DoodlrJS** 2015

- [github.com/JCGrant/Doodlr](https://github.com/JCGrant/Doodlr)
- A real-time, web-based, collaborative, drawing application.
- Built a variety of painting tools.
- Wrote the application-database communication layer.
- Wrote the event handlers for the user interfaces.

**Pintos** 2015

- Implemented various Operating System features such as process sleeping, thread priority donation, a BSD-scheduler, user-space programs and virtual memory.

**WACC Compiler** 2014

- Compiles a C-like language called WACC to ARM Assembly.
- Supports type derivation, external C function calls, modules, floats, loop unrolling, function inlining, and C-like structs.

**Enigma Machine** 2014

- Implemented a fully functioning Enigma machine in C++.

**Raspberry Pi Project** 2014

- Tasked with writing an ARM emulator and an assembler.
- Wrote an ARM program, debugged it with the emulator, compiled it with the assembler, then ran it on a Raspberry Pi.

**Kingsbridge Community College** 2007 - 2013

- A Level - Maths (A\*), Further Maths (A), Chemistry (A)
- GCSE - 11 GCSEs (A\* - B)

## Work

**Financial Services Intern - Accenture** 2016

- Wrote software for Accentures Trading Platforms.
- Created visualisations of financial data.
- Gained a strong understanding of the securities market, and various trading and risk management strategies.
- Took a leadership role.

**Imperial College Mentality Vice President** 2015 - 2017

- Mentality is a mental health awareness society which I have played a major role in setting up.
- Mentality is single handedly responsible for Imperial pledging over 300,000 to improve its mental health services.
- Coordinated events, gave presentations, recruited members.
- Responsible for organising the society, and creating and maintaining the website.

**Imperial College Dance IT Officer** 2014 - 2017

- Responsibilities include creating and maintaining the website.

**Twofour** 2011 & 2012

- Shadowed staff and observed their work.
- Learnt Ruby on Rails and C#.
- Completed various programming challenges.

## Personal Projects

**Blox** 2016 - Present

- [github.com/JCGrant/Blox](https://github.com/JCGrant/Blox)
- A Minecraft Server wrapper which adds extra functionality to the game through plugins.

**Multiplayer Asteroids** 2016 - Present

- [github.com/JCGrant/multiplayer-asteroids](https://github.com/JCGrant/multiplayer-asteroids)
- A real-time multiplayer game where users can fly around in an infinite 2d universe, and shoot one another.

**Stock Market Simulation** 2015

- Wrote multiple bots, each producing and wanting specific items. They trade with one another to achieve their needs.
- Prices of items increase and decrease depending on the laws of supply and demand.

**Digit Recognition Neural Network** 2015

- Wrote a deep neural network to recognise handwritten digits.
- It achieves an accuracy of 99.6%.

**Social Network** 2013

- Wrote a robust social network complete with profiles, a newsfeed, friendships, and image galleries.

**Dungeons & Dragons Character Builder** 2012

- Wrote a parser to extract information from a PDF.
- Created a web-app which displays the information and allows users to create, and update, multiple characters.

**Code cracking tools** 2012

- Wrote tools to help crack codes given by the University of Southampton National Cipher Challenge.

## Awards and Achievements

**1st place, G-Research's Coding Competition** 2014

- Wrote a bot which traded instruments on a virtual market with several other bots, each trying to making the most money.

**Computing Topics** 2014

- My social network analysis presentation was voted best in the year by my peers.

## Skills

**Programming Languages**

- Proficient - Python, C++, C, Java, C#, Javascript, Ruby, MATLAB, HTML, CSS, Lisps.
- Intermediate - Haskell, PHP, SQL, R.
- Basic - Go, Rust, Elm.

**Computing Tools and Utilities**

- Linux, OS X, Windows, Vim, Git, Virtual Machines, Spreadsheets, Photoshop.

## Personal

- Hackathons, Project Euler, and other programming challenges.
- Game development.
- Salsa, Latin and Ballroom dancing.
- Public speaking, Debating.
- Guitar, Piano, Singing.