# James Grant

Linstead Hall, Princes Gardens, London, SW7 1BU
james@jcgrant.com
www.jcgrant.com
(+44) 07716764153

## Education

**Imperial College London** 2013 - 2017

MEng in Computing and Artificial Intelligence.

**Autonomous Drone** 2017
- Implemented accurate 6D motion estimation, using input from a drone's onboard camera and inertial measurement unit.

**ColDE** 2016
- github.com/JCGrant/ColDE
- A real-time, collaborative, development environment.
- Allows multiple users to write code in the same workspace, simultaneously and seamlessly, in a Google Docs-esque fashion.

**Doodlr** 2015
- github.com/JCGrant/Doodlr
- A real-time, web-based, collaborative, drawing application.

**PintOS** 2015
- Implemented various Operating System features such as process sleeping, thread priority donation, a BSD-scheduler, user-space programs and virtual memory.

**WACC Compoiler** 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 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 GCSE's (A* - B)

## Work

**Financial Services Intern - Accenture** 2016
- Wrote software for Accenture's 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

**JLang** 2017 - Present
- github.com/JCGrant/JLang
- A toy python-esque language, implemented in Haskell

**Blox** 2016 - Present
- 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
- 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, from first principles, to recognise handwritten digits, achieving 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.

**National Cipher Challenge toolset** 2012
- Wrote programs to aid in deciphering various encoded texts.

## Awards and Achievements

**1st place, G-Research's Coding Competition** 2014
- Wrote a bot which traded instruments on a virtual market.

**1st place, Computing Topics Course** 2014
- My social network analysis presentation was voted best in the year.

## Skills

**Programming Languages**
- Proficient - Python, C++, C, Java, C#, JavaScript, Haskell, SQL, Ruby, HTML, CSS.
- Intermediate - PHP, MATLAB, R, Go.
- Basic - Rust, Elm, Erlang, Elixir.

**Computing Tools and Utilities**
- Linux, OS X, Windows, Vim, Git, Various TDD and BDD libraries, 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.