

James Grant

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Education

Imperial College London	2013 - 2017
MEng in Computing and Artificial Intelligence.	
Autonomous Drone	2017
<ul style="list-style-type: none">– github.com/JCGrant/AutonomousDrone– Implemented accurate 6D motion estimation, using input from a drone's onboard camera and inertial measurement unit.	
ColIDE	2016
<ul style="list-style-type: none">– github.com/JCGrant/ColIDE– 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.	
DoodlrJS	2015
<ul style="list-style-type: none">– github.com/JCGrant/Doodlr– A real-time, web-based, collaborative, drawing application.	
PintOS	2015
<ul style="list-style-type: none">– github.com/JCGrant/PintOS– Implemented various Operating System features such as process sleeping, thread priority donation, a BSD-scheduler, user-space programs and virtual memory.	
WACC Compiler	2014
<ul style="list-style-type: none">– github.com/JCGrant/WACC– 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
<ul style="list-style-type: none">– Implemented a fully functioning Enigma machine in C++.	
Raspberry Pi Project	2014
<ul style="list-style-type: none">– 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
<ul style="list-style-type: none">– A Level - Maths (A*), Further Maths (A), Chemistry (A)– GCSE - 11 GCSEs (A* - B)	

Work

Financial Services Intern - Accenture	2016
<ul style="list-style-type: none">– 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
<ul style="list-style-type: none">– 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
<ul style="list-style-type: none">– Responsibilities include creating and maintaining the website.	
Twofour	2011 & 2012
<ul style="list-style-type: none">– Shadowed staff and observed their work.– Learnt Ruby on Rails and C#.– Completed various programming challenges.	

Personal Projects

Blox	2016 - Present
<ul style="list-style-type: none">– github.com/JCGrant/Blox– A Minecraft Server wrapper which adds extra functionality to the game through plugins.	
Multiplayer Asteroids	2016 - Present
<ul style="list-style-type: none">– 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
<ul style="list-style-type: none">– 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
<ul style="list-style-type: none">– Wrote a deep neural network to recognise handwritten digits.– It achieves an accuracy of 99.6%.	
Social Network	2013
<ul style="list-style-type: none">– Wrote a robust social network complete with profiles, a newsfeed, friendships, and image galleries.	
Dungeons & Dragons Character Builder	2012
<ul style="list-style-type: none">– 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
<ul style="list-style-type: none">– 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
<ul style="list-style-type: none">– Wrote a bot which traded instruments on a virtual market with several other bots, each trying to making the most money.	
Computing Topics	2014
<ul style="list-style-type: none">– 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.