James Grant

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Education

Imperial College London 2013 - 2017

MEng in Computing and Artificial Intelligence.

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

CoIDE 2016
- github.com/JCGrant/CoIDE
- 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.

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

PintOS 2015
- 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 Compoiler 2014
- 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
- 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

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 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.