James Grant

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London + Remote

Values

- Functional Programming == <3.
- Testing code must be done early and often, and should be easy.
- Domain Driven Design makes everyone's lives easier.
- Communication is key for any project / team / company to succeed. A sense of humour goes a long way too.
- Raise those around you. Never stop learning.

Work

Machine Learning Software Engineer - Babylon Health   2019 - 2020
- Wrote a Natural Language Understanding pipeline in typesafe Python, using functional programming patterns.
- Took ownership over legacy Python code and refactored it.
- Wrote a Visual Programming Language to allow designers to create complex Alexa Skills.
- Gave lectures to my workmates on technologies I found interesting and useful (Haskell, Golang, TypeScript, React.js)
- Supervised Junior devs, with their work.

Research Engineer - Emotech   2017 - 2018
- Wrote a Visual Programming Language (Inga) to allow designers to create complex behaviour for a smart-home robot assistant (Olly).
- Wrote tens of thousands of lines of Go in a distributed system of over 20 microservices (both embedded and web-based), including the core services of the Olly robot.
- Wrote a Natural Language Generation Engine which augments sentences with contextual information.
- Introduced Trello to my workmates and became Trello Master.
- Gave lectures, and supervised interns + junior devs.

Computer Vision Research Engineer Intern - Imperial College   2017
- Wrote real-time person tracker, which ran on an Android phone.

Financial Services Intern - Accenture   2016
- Created visualisations of financial data for reinsurance companies.
- Gained a strong understanding of the securities market, and various trading and risk management strategies.

Vice President - Imperial College Mental Health Society   2015 - 2017
- Set up Imperial's first mental health awareness society.
- Collected data from students which resulted in Imperial pledging over £300,000 to improve its mental health services.
- Responsible for coordinating events, giving presentations, recruiting members, and creating and maintaining the website.

IT Officer - Imperial College Dance Club   2014 - 2017
- Wrote a tool which connected to Imperial's Society API and checked whether dancers had valid, paid memberships.
- Introduced Slack and Trello to the Society's committee.
- Created and maintained a new website, which was easily updatable by non-technical individuals.

Web Developer Intern - Twofour   2011 & 2012
- Built a Facebook-esque social network with profiles, a newsfeed, friendships, and image galleries.

Skills

Programming Languages
- **Expert** - Python, Go, Java, JavaScript+TypeScript, Haskell, C#, Bash, SQL, Ruby, HTML+CSS, Lisp+Scheme.
- **Proficient** - C++, C, Rust, Elixir, OpenGL, PHP.
- **Basic** - Elm, Erlang, R, MATLAB.

Computing Tools and Utilities
- All OS's, Vim, Git, Docker, Spreadsheets, Photoshop, Machine Learning tools.

Education

Imperial College London   2013 - 2017
MEng in Computing and Artificial Intelligence.

Generative Procedural-Parametric Architectural Design   2017
- Final year thesis on parallel-distributed genetic algorithms.

Autonomous Drone   2017
- Wrote a Kalman filter, and a PID controller, to allow a drone to fly a programmed route autonomously.

CoIDE   2016
- A real-time, collaborative, IDE. Supports multiple users writing and running Python programs, and live editing of web-apps.

Doodlr   2015
- A real-time, collaborative, paint application. Multiple users can paint together using various tools and styles.

PintOS   2015
- Implemented an Operating System, in C.

WACC Compiler   2014
- Compiles a C-like language, 'WACC', to ARM Assembly.

Enigma Machine   2014
- Implemented an Enigma machine in C++.

Raspberry Pi Project   2014
- Implemented an ARM emulator, and assembler, in C.

Personal Projects

I have over 100 personal projects, hosted at github.com/JCGrant.

Apollo   2020
- Record music loops with friends over the internet using websockets.

emojibot   2019
- AI chatbot which takes natural language and replies with emojis.

glambda   2018
- Lambda calculus interpreter.

Twitch Paints Art   2018-now
- Live streamed canvas, on which Twitch users can paint via the chat.
- Has stayed running, with no errors, since deployment.

Kilo   2017
- A text editor. Supports searching and language syntax highlighting.

Blox   2016
- Using man-in-the-middle attacks to allow Minecraft plugins to be written in Go.

Stock Market Simulation   2015
- Simulate agents trading goods, following the laws of supply and demand.

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.

Personal

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