

# SAM BARRETT

Wilverley, 81c Main Road, Naphill ◊ High Wycombe ◊ HP14 4PZ

◊ tel:07771196396 ◊ email: sajabarrett@gmail.com

## TECHNICAL SKILLS

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- Python 3
- Java
- Golang
- Rust
- Amazon Web Services
- Docker
- Terraform
- Git
- CircleCi
- SQL
- Packer
- Vagrant
- Bash Scripting
- Unix
- Julia
- Alibaba Cloud
- L<sup>A</sup>T<sub>E</sub>X

## EDUCATION

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### MSci Computer Science

The University of Birmingham, School of Computer Science

*On track for a 1<sup>st</sup> class degree*

Sept 2017 - Present

**Graduating in 2021**

Modules Taken/Taking:

#### Year 4, *Current* Classification: TBD

- Principals of Programming Languages, Design and Implementation (Extended)
  - Compilers
  - Theoretical Programming Language Principals
  - Formal Code Verification
- Computer Vision and Imaging (Extended)
- Algorithms and Complexity (Extended)
- Final Year Project
  - Road-traffic optimisation using Genetic algorithms.

#### Year 3 Classification: TBD

- Intelligent Data Analysis
- Intelligent Robotics
- Machine Learning
- Nature Inspired Search and Optimisation
- Neural Computation
- Parallel & Distributed Systems
- Software Design Study

#### Year 2, 67%, Classification: 2:1:

- C++ Programming (C/ C++)
- Computational Vision (MATLAB)
- Functional Programming (OCaml)
- Introductory Databases (SQL)
- Mathematical Techniques for Computer Science
- Natural Language Processing 1 (Python3, specifically NLTK packages)
- Reasoning (Prolog)
- Team Project (Java)
- Theoretical Computer Science

#### Year 1, 73%, Classification: 1<sup>st</sup>:

- Data Structures & Algorithms
- Elements of Function Programming (OCaml)
- Introduction to Artificial Intelligence
- Introduction to Software Engineering (Agile, Git, Eclipse)
- Language and Logic
- Robot Programming (Java)
- Software Workshop 1 (Java)

### Royal Grammar School, High Wycombe, 2010–2017

- 3 A-Levels in Mathematics, Computer Science and Physics
- 1 AS-Level in Further Mathematics
- 11 GCSEs including A\*s in Maths and English

## INDUSTRIAL WORK EXPERIENCE

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### Brightcove, Software Engineering Intern

June - September 2019

- Worked in a small team initially focused on dev-ops tasks using Terraform and Docker to deploy and provision Alibaba cloud infrastructure for video playout
- Due to the nature of the region we were deploying to, measures had to be taken to reduce downloads on the individual instances, therefore, tools such as *Packer* and *Docker* were invaluable.

These tasks also called for a lot of bash scripting to provision and link up the various systems.

- I went on to work on a major project overhauling an internal API. This was primarily written in Golang with behavioural tests and mocks written in Ruby. As this new API would silently replace the existing system, testing was critical to making sure there would be no disruption to customers. As a result, any new feature/ change required new unit (Golang) and behavioural (Ruby/ Cucumber) tests to be written and passed.
- This team utilised Continuous Integration heavily, specifically CircleCi, to assert any new merges weren't going to break the existing codebase. This required me to learn this system & write a terraform deployment pipeline on the initial project.

## WORK EXPERIENCE

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### Durashine Auto Body Restoration, Cleaning Technician

June – August 2018

- Worked in a team on multiple sites, interacting with customers and other staff members constantly.
- Required the ability to learn new skills very quickly whilst on the job.
- Communication was paramount as you needed to coordinate with the rest of the team to complete the job.

## EXTRA-CURRICULAR

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### Personal Projects

- go-Canvas-cURL a CLI application allowing for all Lecture notes and course resources to easily be downloaded from the University's VLE
- Univerity Notes Typesetting
  - Starting in second year, I have started investigating the best ways to typeset my notes for University.
  - Publishing the results on my website I have developed tooling to allow me to write markdown files with  $\LaTeX$  injection and compile to html for web-viewing.
- *Ricardo* Discord Bot A Discord bot for use on personal server. Featuring CI/CD deployment to Google Cloud via Terraform and CircleCI

### 48 Hour Hackathon (Hack the Midlands 3.0)

- I, along with a team of coursemates, attended a 48 hour "*Hackathon*" in October last year.
- Here we stated work on an app for monitoring and reporting crime in our local student area utilising natural language processing to recognise crime reports from Facebook posts.

### Guest Lectures

- I have attended multiple guest lectures in my time at university, mainly focusing on functional programming.
- These have been extremely interesting and have given me insight into the current research areas in the field.

## REFERENCES UPON REQUEST

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