Matthew Barber

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PROFILE

I'm a BSc Computer Science graduate able to engineer my own applications to accomplish bespoke tasks, from quick scripts to fully-fledged websites. I work efficiently alone, being a disciplined and resourceful individual always eager to improve my craft. I enjoy working with and learning from my peers, able to communicate my own ideas succinctly.

PROJECTS

Financial Analysis Stack Coursework

Python application that creates linear regression models of stock market histories. Demonstrates how to build applications with distributed data via Hive on HDFS, and how to utilise parallel processing with Spark. All services are initialised as Docker containers.

asciiforever.net

Django social platform for text artists to share their work and interact with other users. Niche features include rasterisation of text to generate Open Graph images and a web renderer for ANSI escape sequences.

yygarchive.org

Flask site to search for games of a shutdown games portal, querying a Sqlite store which holds game downloads and metadata. The store was procured from an existing WARC collection which was replayed and subsequently scraped.

Aston Events Site Coursework

Node.js site for students to manage events. Uses Express for routing, Pug for templating, and MongoDB with Mongoose for data storage.

coinflip

Python library for assuring cryptographic randomness in RNGs. The implemented statistical tests use pandas under the hood. A testing suite for coinflip itself ensures reliable results.

Recursive GZIP Bomb Tutorial

Comprehensive primer on the file format and compression algorithm theory involved in creating compressed file quines (i.e. extracts to an exact copy of itself, ad infinitum). Self-referential checksum was brute-forced by a multiprocessing Python script.

EXPERIENCE

Ferndale Homeless Shelter Volunteer	*Nov. 2015—April 2019*
Starbucks Barista	*Sep. 2018—Feb. 2019*
OTS Homeless Shelter Volunteer	*Sep. 2018—Feb. 2019*
Adventure Island Theme Park Host	*July 2017—Sep. 2018*

EDUCATION

Aston University	*Sep. 2016—July 2020*

1st (Honours) BSc Computer Science

LANGUAGES

JavaScript
SQL
Python
Bash
C#
Java

WEB STACK

Node.js
Flask
Sqlite
MongoDB
Pug
Jinja
Vega-Lite
Jekyll
jQuery
SASS

TOOLS

Git
SSH
Docker
Jupyter
pre-commit
GitHub Actions
TravisCI
AppVeyor