Sam Healer

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Experience

Hewlett Packard Enterprise — Bristol
Software Engineer — *September 2016 - present*

- **Storage Central (September 2020 - present)**:
  - Technical lead for interservice communications on a greenfield HPE Storage-wide aaS offering.
  - Defining standards for synchronous and asynchronous communication across Kafka and gRPC, making use of protobuf and CloudEvents.
  - Developing libraries and sample microservices in Go and Python to demonstrate best practices and to provide reusable code for other teams.
- **Cloud Volumes Backup (March 2019 - September 2020)**:
  - One of the original subject matter experts on a new storage as a service offering.
  - Technical lead on the "restore to Cloud Volume" feature, which acted as the key interaction point between the existing and new services. This involved designing and implementing the end to end solution.
  - Worked on the overall design and architecture of Cloud Volumes Backup across the data and management planes with our senior architect.
  - Adapted and containerised an existing legacy application plus developing additional sidecar containers in Python with Flask.
  - Developed a REST microservice in Go to manage the lifecycle of these containers on a bare-metal Kubernetes cluster.
- **Wave 3 (October 2018 - March 2019)**:
  - Developed proof of concept work on a policy engine for determining efficient distribution of data across a network of storage devices using or-tools and Minizinc.
  - Implemented a simulator allowing us to demonstrate and investigate different applications of the policy engine without requiring real time or real infrastructure.
- **Cloud Bank Storage (October 2016 - October 2018)**:
  - One of the core developers on Cloud Bank Storage from the project's conception.
  - Implemented a range of additional features across C and Python layers of the stack.
  - Produced a number of proof of concept characterisation pieces to determine efficient tuning of the system.
  - Designed and implemented a mock cloud storage provider layer in Python for testing purposes.
  - Created a support tool in Python for diagnosing eventual consistency problems and for self-certifying third party cloud storage providers.
  - Awarded DCIG Rockstar – Bronze (2017) as part of the team.
- **Other work**:
  - Mentoring (2019 - present): regular mentoring of a number of interns and junior engineers, covering a variety of areas from software development to career progression and soft skills, ranging from more ad-hoc sessions to day-to-day involvement.
  - Intern recruitment (2018 - present): leading the intern recruitment process for the Bristol site, including designing the standard technical and management interview questions, co-ordinating and running assessment centres, and managing the current interns in allocating CV screenings and phone interviews.
  - Tech Con (2018 - present): co-authored six technical abstracts submitted to HPE's internal technical conference, presenting one that was accepted as a poster at Tech Con Orlando 2020.
  - Deep dives (2019 - present): organising and chairing a series of regular deep dive sessions within the team, to promote sharing of knowledge. Within this, I have spearheaded discussions on standardisation of development practices and producing our internal style guide.
  - Customer demonstrations (2018 - present): producing collateral presentations and canned demos for use at technical conferences and conventions, and presenting these demos for customers at HPE Discover Virtual Experience 2020.

University of Bristol Bristol

Research intern *Summer 2015*

- **Mood and Decision Making Study**: Created web-based study using jsPsych to measure respondents' reaction times to answering questions and categorising moving dots, in order to determine a link between mood, decision making ability, and drug usage

The Technology Studio Letchworth Garden City

Software intern *Summer 2014*

- **Google Glass**: Created proof of concept Glassware for Google Glass, both native (Android SDK and GDK) and using Xamarin (C#)
- **Augmented Reality Mapping Service**: Developed a proof of concept for an augmented reality mapping service using OpenCV

Earthware Letchworth Garden City

Software intern *Summer 2012 and 2013*

- **Proof of Concept development**: Developed proof of concepts as part of client work for Transport for London and created applications for various Google Maps tools such as custom Street View displays, using JavaScript and PHP
- **London 2012**: Worked as part of a team on developing the interactive road race maps for the London 2012 website, using JavaScript

Education

University of Bristol

MEng Computer Science, First Class Hons. *2012-2016*

- Late-breaking work poster presented at SIGCHI 2016
- Fintan Darragh prize for outstanding contribution to the life of the department - 2016
- IPL Prize for Best Third Year Group Project - 2015
- Netcraft prize for Top 10 2nd Year Students in Computer Science - 2014

Haberdashers' Aske's Boys' School

A2 level: A (Mathematics), A (Computing, Politics); AS level: A (Economics); GCSE: 5 A*, 3 A, 2 B* *2004-2011*

- Barclaycard Cup for Computing - 2010

Projects

Belly Laughs At Home - volunteering (2020):

- Created a web application for acts to upload videos for an online stand-up livestream raising money for Bristol charities.
- Developed using Python, Flask, and boto3 using S3 to store video files.
- Added processing and analysis of video files on upload using ffmpeg to determine values useful for the video editors when exporting.

Skylark - hack days project (2019):

- Created an application to represent git repositories as chiptune music, using Python, FluidSynth, and pretty-midi.
- Samples and further details available at http://samhealer.com/projectpages/skylark/

Digimakers - volunteering (2017-19):

- Ran Python and Raspberry Pi workshops for children aged seven to 17 at Digimakers, a regular series of events designed to get children interested in STEM.

Magpie - Masters thesis project (2016):

- Developed a system to detect plagiarism in MIDI files efficiently and accurately, using a combination of locality sensitive hashing, a custom representation of MIDI data, and a custom distance metric based on harmonic similarity, written in Python.
- The final system comprised both a CLI and a web interface to allow users to input either a MIDI file or draw in a melody directly on a piano roll, using Django and tone.js

Key Skills

Languages: Go, Python **Technologies**: Docker, Kubernetes, Protobuf, Kafka, OpenAPI