James Cooke

Lead Software Engineer

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As an experienced software engineer, I have worked with Python for the last 10 years. Software behaviours, especially related to consistency and reliability, are the focus of my programming practice, which employs a blend of test-driven development, unit-testing and integrated testing.

My goal is to work with organisations that care about software quality, are iterating their products and development processes over a long-term life cycle, and deliver measurable value to customers and stake holders.

A full CV with all previous professional experience is available on request.

Primary Technical Skills

- API design and documentation
- Bash
- CI/CD implementation
- Docker
- GNU/Linux
- Git
- Python
- SQL
- Test-Driven Development

Recent Professional Experience

Lead Reporting Engineer

Mixcloud   **May 2020 → Present**

Using: Airflow, BigQuery, Buildkite, Dataproc, Docker, GCS, Luigi, Python, SQL

Mixcloud is a popular online music streaming service that is required by licensing agreements to deliver detailed sales and usage reports for all licensed tracks on a monthly basis. As the first permanent member of the reporting team, I have:

- **Established the report delivery process.** When I joined Mixcloud there were no formal procedures in place for delivering reports. Now however, the reporting team apply the workflows I developed to handle the various scenarios in which reports are delivered to rights holders. These workflows are adapted for each partner and captured in separate playbooks, the use of which has stabilised and formalised the monthly delivery procedures; improved report quality by catching bugs; and opened the door to full automation as the team are currently implementing them in Airflow.
- **Built a team.** I defined the roles for two developers, the analyst and the technical manager all hired in the last year. For the developer hiring I built the coding test and an automated marking system that awarded the highest scores to candidates providing answers to 10dp accuracy. This meant that we selected developers with an eye for detail and accuracy as required by the role.
- **Developed partner code.** Label-specific parts of the reporting pipeline were incomplete when I joined Mixcloud. Under my guidance we have completed partner code for three major labels, one of which has received official sign off from the label.
- **Improved the reporting codebase.** The report validation tool I created has lead to many new and hard to find bugs being discovered throughout the project - from VAT miscalculations, to duplication of listener data, to missing per-subscriber-minimum values being applied.
- **Made codebase easier to work with.** In the main codebase, the improved test suite and linting I implemented has grown to contain over 400 "quick tests" which give early feedback before calling the integrated tests. These have improved the developer experience by reducing the feedback time from minutes to seconds.

Senior Software Engineer

Lucid   **Mar 2019 → May 2020**

Using: Docker, Golang, Java 8, Jenkins CI, OpenAPI v3

Lucid's Marketplace provides survey respondents to market research companies and generated over $100M in revenue in 2019. My work at Lucid was mainly within the team redesigning and building a new Marketplace to

use Golang services described with OpenAPI v3 documents. During my time at Lucid I:
○ Lead the API design of three new services.
○ Implemented one of these new services, along with an abstract DSL to describe the logic between answers to adjust respondent flow. I had responsibility for this language's definition and developed its Golang library providing syntax validation.
○ Built an integration test suite for another of these new services. The suite compiled a Java client API based on service's OpenAPI document, which it then exercised to test the service.
○ Designed a linting process for OpenAPI documents wired into each service's CI/CD pipeline.
○ Provided training to other Lucid dev teams in OpenAPI and development processes.
○ Resolved specific OpenAPI issues and design questions, especially related to how OpenAPI documents were integrated into the SDET team's testing procedures.

Backend Developer

Construct Technology   Oct 2014 → Nov 2018
Using: Ansible, CircleCI, Couchbase, Django Rest Framework, Grafana, Python
Construct is a project management app for the construction industry.
○ Single-handedly developed the API server, push notifications, Dropbox and Couchbase integrations, and multi-layer project and document permission system.
○ Handled complex offline-online Couchbase change resolution logic.
○ Built out a Grafana / Graphite / statsd stack across all services to better manage system performance and bottlenecks.

Python Development Contractor

My primary goal at Coding Cooke (Dec 2013 → Sep 2017) was to turn the transient nature of contracting to my advantage. I boosted my experience by working with a wide variety of clients in different technical environments. Coding Cooke's USP was high-quality code covered by tests that could be maintained and extended by the client's team after the contract ended. Coding Cooke had thirteen clients, two are below.

Glint Pay   Apr 2017 → Jun 2017
Using: Cucumber, Django Rest Framework, Docker, MySQL, Python
Glint provided a gold-backed prepaid Mastercard and mobile app using a microservice architecture comprising approximately fifty containers. I developed and integrated new admin service containers, backfilled behaviour-driven tests against existing transaction services, and refactored existing Django code.

Huq Industries   Nov 2015 → Apr 2016
Using: Ansible, Django Rest Framework, PostgreSQL, Python
Huq is an analytics provider for mobile app developers. As the sole backend developer on this project I built out the prototyped collection pipeline, resolution pipeline and reporting API to make the product ready for launch. As part of that work, I backfilled end-to-end tests and eliminated existing critical bugs.

Education

Imperial College, London   Oct 1998 → Jun 2002
MEng Computing (hons)

Highlighted Personal Project

Flake8 AAA   Feb 2018 → **Present**
github.com/jamescooke/flake8-aaa
A linter for Python tests. This Flake8 plugin ensures that tests are formatted to the Arrange Act Assert pattern to help make tests simpler, more consistent and easier to understand.