

## Technical Skills

### Languages

- Proficient in Python (2 & 3)
- Experienced in Java, GoLang, Perl, JavaScript, Bash, CSS,  $\text{\LaTeX}$ , Jinja
- Familiar with C#, Mathematica, MATLAB

### Software and Technologies

- *Web*: Django, FastAPI, Flask, Django CMS, Amazon Alexa, REST Framework
- *Infrastructure*: AWS, Kafka, RabbitMQ, Celery, AWS lambda
- *Monitoring*: Prometheus, New Relic
- *Version Control*: Git, Mercurial
- *Continuous Integration*: Jenkins, Gitlab CI, Travis CI, Circle CI, Rundeck, Sentry, PACT
- *Continuous Delivery*: Docker, Nomad, Github Actions, GH Container Registry
- *Platforms*: Linux, MacOS, Windows
- *Architectures*: Event-Driven, Micro-services, Scalable, Server-less, Monolithic, Distributed, Modular
- *Coding Practices*: TDD, DDD, BDD, Agile, Kanban, Scrum

## Experience

### Lead Principal Engineer

BC, Canada

*Tucows Inc.*

*November 2020 — March 2022*

Led a highly skilled interdisciplinary team to deliver a modern distributed event-driven ISP platform leveraging innovative, modern, asynchronous, containerised technologies (i.e. Kafka, Docker, Nomad, FastAPI, Flask, etc.) whilst reporting directly to CTO and VP.

- Architected a modular, microservices platform in Python centred on modern software life-cycles and development practices.
- Developed atomic, disposable and asynchronous services using cutting edge technologies (Python/FastAPI/Kafka).
- Designed repeatable CI/CD pipelines using container orchestration technologies (i.e. Docker/Nomad).
- Integrated novel processes and microservices with legacy monolithic systems.
- Embedded code compliance checks, static analysis, health checks, and continuous service monitoring within development life-cycles.
- Improved legacy projects with modern development ethos through containerisation and integration with cutting technology stacks.
- Managed organisational progress reports, demonstrations, and delegated team responsibilities to align relevant stakeholders
- Delivered organisation-wide workshops to educate staff on innovative modern architectures and industry standard practices. This included mentoring team members in a remote-first environment.

### Lead Developer/Architect

London, UK

*Sainsbury's PLC (associate of Daemon Solutions LTD)*

*April 2018 — November 2020*

Built and architected an Amazon Alexa Skill using adaptive and scalable architectures with stateless server-less infrastructure (e.g. AWS Lambda functions) including integrating text-to-speech Machine Learning APIs with legacy platforms.

- Led a highly skilled inter-disciplinary team whilst taking ownership of requirements gathering, prototyping, feature implementation and continued maintenance.
- Implemented Python driven voice interfaces to APIs within existing commerce infrastructures to allow for seamless voice customer interactions with baskets.

- Optimised the development pipelines and life-cycles by adopting and improving new technologies to create complex analytics and monitoring dashboards with bespoke alert thresholds.
- Delivered, specified and designed user interaction flows using innovative voice recognition technologies.
- Maintained and improved functionality and security of financially critical legacy systems.
- Architected maintainable language agnostic systems using Continuous Integration and Continuous Delivery pipelines in a DevOps setting.
- Collaborated closely with Amazon in the development and improvement of Alexa closed-beta voice recognition features.

### **Senior Developer (Contractor)**

London, UK

*MyOptique Group*

*Feb 2018 — April 2018*

Built server-side REST API in highly complex parallelised and scaled architecture for an internal order tracking and management system.

- Implemented internal API endpoints using Django Rest Framework to manipulate database resources.
- Delivered new features in an existing distributed and multi-threaded environment using RabbitMQ and Celery.
- Managed highly complex abstraction layers while refactoring existing codebases to adhere to modern coding practices.

### **Senior Developer (Contractor)**

London, UK

*Arts Alliance Media*

*Feb 2017 — Dec 2017*

Engineered server-side logic in a polyglottic environment with software designed for cinema management and film scheduling.

- Implemented complex continuous integration for components engineered in Perl and Python.
- Built new tooling and complex abstracted class structures to fulfil technical requirements such as new advert selection algorithms.
- Worked as part of a team to deliver features within expected deadlines.

### **Software Developer (Contractor)**

London, UK

*Lystable*

*Oct 2016 — Jan 2017*

Engineering server-side logic for software built with a domain-driven micro-service architecture using Flask/Python3.5 for an employee management solution.

- Implemented complex business-critical logic including financial systems.
- Contributed to discussions regarding the evolution of complex distributed architecture and assessed future implications of design decisions.
- Provided constructive and objective feedback using procedures such as code-reviews to ensure code quality and sanity within the team.

### **Software Developer (Contractor)**

London, UK

*Pancentric Digital*

*Feb 2016 — Oct 2016*

Primary full-stack developer on numerous projects engineered in Python/Django with a focus on server-side logic.

- Provided support and maintenance on CMS-driven web applications with highly complex business-critical logic.
- Provided guidance and mentorship to a small team.
- Modernised existing codebases with an emphasis on Continuous Integration and best practices.
- Introduced new processes to streamline the delivery of projects in accordance to deadlines.
- Implemented and re-factored existing code-bases using innovative technologies conducive to robustness, modularity and productivity.
- Assessed the viability solutions and delivered completed features in accordance to agreed terms.

**Software Developer***Global Radio*

London, UK

*July 2015 — Jan 2016*

Full-Stack developer on highly distributed software primarily engineered in Python.

- Maintained highly complex legacy centralised Content Management Systems with dissociated, dependent services.
- Negotiated and coordinated new procedures to reconcile content-driven legacy projects with modern programming ethos.
- Collaborated with a large team of developers with varied skills to scope out work packets and deliver results effectively.
- Utilised all elements of the stack including complex caching, Python code and JavaScript front-end to deliver completed features.
- Provided technical assistance to both technical and non-technical users.

**Software Developer***Tangent Snowball PLC*

London, UK

*November 2013 — June 2015*

Primary back-end developer on numerous projects engineered in Python/Django.

- Engineered projects to handle high capacities using micro-service architecture and dynamic scaling.
- Extended and enhanced Django-Oscar to create dynamic bespoke e-commerce solutions.
- Adapted to clientele needs by rapidly deploying and integrating novel functionality through various agile development techniques.

**Software Developer (Data Analytics)***Ubiquity Press (Open-Access Publisher)*

London, UK

*March 2013 — November 2013*

Developed and maintained an exploratory data analysis tool for business and financial decisions.

- Collated data using various external APIs into a structured database.
- Performed complex data analysis using mathematical libraries such as Numpy and Matplotlib.
- Provided graphical representations of results through an interactive web interface designed for non-technical end-users.
- Developed a web API which provided content to a number of academic journals.

**Education****Astrophysics MSci***Royal Holloway University of London*

Egham, United Kingdom

*2008 — 2012*

Aperture Photometry: Performed complex data analysis in Python (Numpy and Matplotlib) on astronomical data. Trained in using high specification equipment (e.g. telescopes, thermoelectrically cooled cameras, electron microscopes etc) and contributed to research in extreme low-temperature physics.

**Additional Details and Interests**

I am a native English speaker (with British Passport) and fluent in French.  
I have a passion for rock climbing and enjoy cooking, as well as photography.

**References are available upon request.**