

Employment

Software Development Engineer *Speechmatics Ltd.*

Oct 2018–June 2019

I worked as part of the team delivering a new SaaS speech transcription service. The system consists of a set of interacting microservices implemented in Python and Golang. We used Elasticsearch, Logstash and Kibana for analytics and support tools. We used Terraform to provision cloud infrastructure on Azure and Jsonnet to generate consistent Terraform and Kubernetes configuration.

Principal Software Engineer *Cambridge Consultants Ltd.*

July 2018–Oct 2018

I worked as part of the Internet Software and Services Group, delivering bespoke cloud-based solutions for clients, deployed to Google Cloud. My focus was on creating back end api servers and orchestration of interacting components in kubernetes clusters.

Senior Software Engineer *Grapeshot Ltd. (now part of Oracle)*

2016–July 2018

I was responsible for a developer portal and associated REST apis. The portal is a Python/Django application and provides account management, subscription plans, quota and usage enforcement and associated documentation. The apis are implemented using either Node.js/Hapi.js or Python/Aiohttp. Components are packaged as Docker images and deployed to Kubernetes clusters (configured using Ksonnet/Jsonnet) provisioned on AWS. Persistence was achieved using MySQL and Elasticsearch. Jenkins is used to automate building, testing and deployment. We provide SDKs and code samples in various languages to facilitate and illustrate use of the apis. We use scrum and agile software development practices.

Contracts Manager *University of Cambridge*

2015–2016

I negotiated and drafted research contracts on behalf of the university.

Paralegal *Ministry of Justice/Sharpe Pritchard LLP*

2014–2015

I assisted the Ministry in negotiations on a large IT contract.

Freelance Computer Programmer *Flax*

2005–2013

I designed and implemented web-based search systems for a variety of clients, usually as a subcontractor for [Flax](#). I completed stand-alone projects in their entirety as well as working as part of a team on larger projects. Most projects were implemented in Python, using the Xapian or Lucene search engines. I made significant contributions to a high level Python wrapper for Xapian; wrote an off-the-shelf open source search system from scratch; as well as many modules for text processing and tokenisation; web, database and file system crawling; indexing and search, as well as web front ends.

Computer Programmer and Team Leader *Scientia Ltd.*

1999–2005

I was responsible for the development of the company's flagship academic scheduling software. This work involved: designing and implementing timetable scheduling algorithms and heuristics; supervising other programmers; liaising with other parts of the company and clients on new features; and determining appropriate bug-tracking, testing and source control processes. I recruited and led other programmers.

Research Associate *Queen Mary College*

1994

I worked in the computer science department on research and implementation in the field proof theory. I investigated the automatic generation of natural deduction proofs.

Assistant Director, Financial Analyst, Computer Programmer *MDT Limited* 1986-1992

I developed computer models for assessing the value of large, complex funding transactions (e.g. bond issues, aircraft leases). I was involved in negotiations with clients, funders and legal advisers; preparing contracts; writing proposals and numerical analyses of transactions.

Education

Online Courses *via Udacity or Coursera*

2011–2015

I have undertaken several online courses on theoretical and practical aspects of computing. In all cases I attained high grades. (a) John Hopkins data science courses: [Data Scientist's Toolbox](#), [Getting and Cleaning Data](#), [R Programming](#), [Exploratory Data Analysis](#). (b) Stanford courses: [Natural Language Processing](#), [Algorithms: Design and Analysis](#), [Introduction to Artificial Intelligence](#), [Machine Learning](#). (c) UC Berkley courses: [Software as a Service](#), [Web Development](#).

Bar Professional Training Course *BBP Law School*

2013–2014

Passed graded Very Competent. I have been called to the bar. Transcript: <http://goo.gl/wSo4yn>

Graduate Diploma in Law *BPP Law School*

2013

Passed with Distinction. Transcript: <http://goo.gl/ljZMYs>.

Doctorate in Theoretical Computer Science *St Hugh's College, Oxford University* 1994–1998

My thesis is entitled "A framework for diagrammatic reasoning". I use category theory to develop techniques for using diagrams and their transformations as formal mathematical proofs. I taught programming to engineering undergraduates (mostly C++). Awarded an Engineering and Physical Sciences Research Council Studentship.

MSc, Advanced Methods in Computer Science *Queen Mary College, London University* 1992–1993

Passed with distinction, with distinction grades in every paper (transcript: <https://goo.gl/i1wdJ5>) The course included the modules: Automated Reasoning; Expert Systems; Logic for Knowledge Representation and Reasoning; Human Factors for Interactive System Design. My dissertation investigated using genetic algorithms to learn logic programs and included software implement in Prolog.

BA and MA, Computer Science *Pembroke College, Cambridge University*

1983–1986

I undertook a variety of theoretical and practical computing courses.

Technical Skills

I have used a wide variety of technologies. I research new techniques and technologies in order to make architectural decisions. Recent projects use the following languages, technologies and development tools: Python (Django, Aiohttp), Node.js (Hapi.js), GraphQL, Elasticsearch, Kibana, Logstash, Filebeats, Redis, RabbitMq, MySQL, Nginx, shell scripts, Make, linux, HTML, CSS, json, \LaTeX , Docker (including compose and swarm), Kubernetes (on AWS clusters; and minikube for local development), Ksonnet/Jsonnet, Git, Jenkins, Bitbucket, Github, Gitlab, Jira, Confluence. I have a good understanding of linux, internet protocols and networking. I am familiar with agile software development and have a good understanding of Scrum.