

Ben Francis

Curriculum Vitae

Benjamin Tola Francis MEng

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Personal Profile

I am a full stack Software Engineer specialising in web applications, web-based operating systems and connected devices. Colleagues have described me as "driven", "creative", "an awesome communicator" and "a web visionary". With over a decade of commercial experience I have acquired a wide range of skills in software engineering, user experience design, system administration and project & product management. I'm also involved in web standardisation as a W3C Invited Expert on web applications and the web of things.

Skills

- Full stack web development with HTML, CSS, JavaScript, Node.js, Java, Python, PHP, and frameworks like Django, Spring and Express.js
- Embedded systems programming including Assembly, C, Python and JavaScript
- User & task analysis, user interface design and user testing
- MySQL, PostgreSQL, JCR, BigTable, SQLite, IndexedDB, LevelDB and PouchDB databases
- Unit testing with JUnit, PyUnit, PHPUnit, Mockito, Mocha and Chai
- Integration testing with Marionette, Mocha and Chai
- Source Code Management with Subversion, Perforce and Git
- LAMP (Linux/Apache/MySQL/PHP), Windows & Mac server administration
- Cloud technologies (Amazon Web Services, Google App Engine & Ubuntu Enterprise Cloud)
- Agile (XP, RUP, TDD, Scrum) development and project management
- Market Research and Product Management

Education

University of Birmingham, September 2005 - July 2009

Department of Electrical, Electronic & Computer Engineering

MEng Computer Interactive Systems

Graduated with First-class honours and the A.P. Jarvis prize for outstanding achievement in a final year project. My degree covered a wide range of topics from electronic and software engineering to cognitive psychology, user interface design and

project management. My final year project was a 3D web application to visualise the colonisation of an artificial reef. I worked in conjunction with the National Marine Aquarium and Marine Biological Association and presented a paper on my project at the Web3D Symposium in Darmstadt, Germany.

Experience

Founder, Krellian (February 2020 - Present)

I incorporated [Krellian Ltd.](#) in 2020 as a company building smart building solutions including interactive kiosks, digital signage and building automation. Krellian was enrolled in YCombinator's [Startup School](#) and was accepted onto the North East [High Potential Startups Programme](#).

Krellian sponsors the [Webian](#) open source project, and the [WebThings](#) IoT platform which was spun out of Mozilla as an independent open source project.

Key Technologies: HTML, CSS, JavaScript, Node.js, Express.js, Electron & Ubuntu Core.

Software Engineer, Mozilla (October 2011 - January 2020)

Staff Application Engineer & Product Owner, Mozilla WebThings (March 2017 - January 2020)

In the Emerging Technologies department I worked as the Product Owner of [Mozilla WebThings](#), Mozilla's IoT platform. This included user interface design, full stack web development, project management and product management. I also contributed to the standardisation of the [W3C Web of Things](#).

Senior Product Engineer, Connected Devices (January 2016 - February 2017)

In the Connected Devices department I worked on prototyping and user testing connected devices products including a smart router, tablet and home monitoring system. I took on a Product Management role as well as being hands on with design, development and user testing.

Front End Engineer, Firefox OS (October 2011 - December 2015)

I worked on the Firefox OS mobile operating system (B2G) for around five years, from shortly after the project's announcement until it was transitioned to the community in 2015. I had involvement in front end development, product ownership, user interface design, user testing and the standardisation of the [W3C Web App Manifest](#) specification.

Key Technologies: HTML, CSS, JavaScript, Node.js, Express.js and Java.

Software Engineer/Product Manager, Rabbitsoft (June 2009 - October 2011)

I was a software engineer at Rabbitsoft, and later became the Product Manager of their web-based collaboration platform, [Clinked](#).

In this role I gained a wide range of experience including agile software development, user interface design, architecture design, market research, usability testing, cloud system administration, project management and recruitment.

Key Technologies: PHP, Java, Spring, HTML, CSS, JavaScript & JQuery.

Technical Solutions Engineer Intern, Google (June 2008-September 2008)

I carried out an individual project over a 3 month internship with Google London. This was the design & implementation of a scalable web-based XML data quality testing pipeline for the Google Maps team in the Partner Solutions Organisation. The project included user & task analysis and agile software development.

Key Technologies: Python, HTML, CSS, JavaScript, XSLT, Django, Perforce, and a wide range of proprietary Google tools & production infrastructure.

"This is a mission-critical tool that we use on a DAILY basis in LEC around the globe... I've been at Google for 5+ years and it's one of the great unsung internal tool-heros." -- Dan Cath, Strategic Partner Manager, Google, 2011

Software Engineer Intern, Senokian Solutions (July 2006 - September 2006)

A two month summer placement as a Software Engineer, working on a complete rewrite of the company's main product (Enterprise Groupware System) as part of a small development team. This included the development and testing of a web framework based on the Model-View-Controller design pattern and the demonstration of its use in the rapid development of business web applications.

Key Technologies: PHP, HTML, CSS, JavaScript, PostgreSQL, PHPUnit, Subversion, Smarty and GNU/Linux.

IT Technician, Vale of Catmose College (August 2004 - September 2005)

In my gap year job I had responsibilities for hardware, software and network installation, maintenance, repairs and technical support for staff and students. I also took on the role of a web developer, developing a web site and calendar publishing based content management system. Other responsibilities included classroom support, working with groups of students on IT projects and attending regular marketing meetings.

Key Technologies: MS Windows, Mac OS X & GNU/Linux (Server & Desktop). PHP, MySQL, HTML, CSS.

Part-time Roles

- Consultant, Digital Native Academy (October 2008 - March 2009)
- Co-founder, Twisted Lemon Solutions Ltd. (June 2005 - June 2006)
- Founder, Tolagrafix/Tolatech (2003 - 2005)
- Web Developer, Presslake (July 2002 - January 2003)
- Assistant Sound Engineer, B&H Sound Services (from June 2001)

Professional Institution Memberships

- Associate Member of the IET (2004 - Present)
- Member of the W3C (2011 - Present)
- Member of the Cambridge Network (2010 - 2012)
- Member of the Web3D Consortium (2008 - 2009)

Publications

Stone, R., White, D., Guest, R., Francis, B. (2008) The Virtual Scylla: an exploration of "serious games", artificial life and simulation complexity, Virtual Reality Journal

Francis, B. & Stone, R. (2009) WebScylla: a 3D web application to visualise the colonisation of an artificial reef, Proceedings of the 14th International Conference on 3D Web Technology, Darmstadt, Germany

Francis, B. (2019) Mozilla WebThings: An open source implementation of the Web of Things, Second W3C Workshop on the Web of Things, Munich, Germany