Laurence Fass – Resume / Curriculum Vitae

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City of Residence	Bristol, England, UK	Websites	syntapse.co.uk, maplio.co.uk, app.maplio.co.uk
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Professional Introduction

I am a full stack software engineer with extensive experience developing software in Typescript, PHP, C++ and C#. I can create and maintain full-stack, reactive, real-time, web-enabled applications using modern tools and methodologies. My current focus is mastery of the Next JS 14+ and React Server Components, though I have experience developing embedded systems, corporate middleware, and web applications using a variety of frameworks. I can create high quality software, both autonomously and in a team environment and I have experience working in both scrum and kanban workflows. I can facilitate all of the elements required to efficiently and securely deliver web content, from managing servers to writing software utilising a variety of standard processes and tools. I also have recent experience working alongside a competent dev-ops team deploying software to AWS and I was pivotal in facilitating observability practices to resolve long-term performance issues in deliverable software and CI pipeline tests. As well as being able to host and create software starting with from a clean operating system, I have a proven track record of effectively diagnosing and managing bugs and issues in complex software systems.

Personal information

I consider software development to be more than a job. It is my vocation, my hobby and my passion. I have spent several years fully immersed in self-funded, independent discovery and development using bleeding edge open-source software web technology, engaging directly with platform and package developers to identify, discover and resolve technical issues without any corporate support. As such, I have been able to discover the merits of industry leading software free from commercial constraints and business agendas. Aside from software development I also have enduring interests in digital currency investment, general investing, accounting, contract, and trust law. To diversify my skills and train both sides of my brain I have also been learning music (theory, guitar, piano, bass guitar and vocals) which has involved amateur public performances and I consider myself a confident and capable performer and public speaker. Music offers my family and friends engagement and enjoyment and I am now passing on my music skills to my to two young children with whom I spend most of my spare time.

Dec 2023 to present

Independently funded

Next.js 14 development and authentication strategies, Syntapse Ltd

Technologies: Docker, Next.js 14, React 18, Redux Toolkit 2, Redux-Saga, Redux-Observables, NextAuth.js , (all work stored on Github)

Technical Activities: I took voluntary redundancy from my last employed role to create a pnpm monorepo to understand monorepo best practices and to exercise and demonstrate Next.JS 14 features. I am hosting **https://nextdemo.syntapse.co.uk** to showcase the new Next app router architecture along with latest APIs for React and Redux Toolkit. I have included a web socket chat feature to demonstrate integration with a Nest.JS web socket gateway (sharing types for client and server type conformance), an e-commerce cart payment flow implemented using only Redux Toolkit (no third party packages) and a variety of features including React Server Components and actions. I am also hosting **https://nextauth.syntapse.co.uk** to demonstrate how to extend NextAuth.JS to create a secure role based Oauth enabled authentication system with email verified registrations and 2FA logins. All sites and servers are hosted with docker, configured to run production and development servers simultaneously using a single code base in a very well structured pnpm mono repo.

Aug 2022 to Dec 2023

Fully remote, full time employment.

Full stack software engineer, Spotlight Sports Group

Technologies: Docker, microservices, monorepos (npm and Nx), Typescript, TyepORM, Next JS, AWS, React, Nest JS, Bull Queue, Opentelemetry, Grafana, Prometheus, Jaeger, Bitbucket, Jenkins

Technical Activities: Full stack software engineer employed to create software in Next JS and Nest JS, developing locally with Docker and deploying to AWS using Terrafom scripts. I significantly increased unit and e2e Jest test coverage on both front end and back end code and assisted junior devs in advancing their understanding of Jest. I fixed long standing issues with memory leaks and was able to speed up e2e tests by freeing up system resources during long tests, I implemented observability across backend software using Opentelemetry pipeline to diagnose and resolve long standing issues with concurrent queue processing. I also helped to restructure a poorly implemented microservice monorepo architecture to sanitise module and package management, and simplify further development.

Jan 2007 to Aug 2022

Independently funded

Open Source research and development, Syntapse Ltd

This was a significant period of self-funded, self-directed research, development and discovery into open source technology funded by property and blockchain investment activity. This was a full time engagement and my motivation was to assess and compare a wide variety of technologies and build a skills-set based on industry leading solutions and practices. After this long period of extensive assessment I committed to specialising in React, Next JS, Nest JS, Redux and Docker development

Languages and platforms: Virtualbox, Linux, Docker, Ansible, Jenkins, Git,Javascript (incuding webpack, browsersync, angular (universal), Typescript, React, Vue, Next, Nest JS, Nuxt, RXJS, Redux, ReduxToolkit, npm, yarn, numerous cli, ngrx, ngxs, jquery, express.js, node.js, socket.io, meteor, D3/C3 charting, backbone/marionette, underscore/lo-dash), PHP (Drupal, Symfony, Laravel, Silex), C++ (MFC, ATL, STL, and Boost libraries), C# and .Net, html5 (using haml, twig, underscore, handlebars, jinja2 template engines) and any css3 transpiler (sass, less, or stylus).

Remote communication web standards: OpenSSL, SSH, Websockets, NFS, HTTP, HTTP2, AJAX, REST, GraphQL, OpenAPI, JSON:API, Hydra, RPC and SOAP.

Data Storage and Management: YAML, JSON, XML, HTML, HAML or any arbitrary data format to design, code, and configure automated testing of entire projects (unit, component, module, integration, E2E), analyse resource usage, and manually debug remote source code. I can also install and configure both SQL and noSQL databases and optimise for scale and performance and I have a practical understanding of mysql, mongo and redis,

Jun 2005 to Dec 2006

Freelance/ Contract

Senior Software Engineer: iMerge Ltd, Cambridge, England, UK

Technologies: Windows XP Pro / C# / Visual Studio .NET 3 / OODBMS / UML / SVN source control / Design patterns / Iterative, time-boxed Agile/scrum/XP development / Continuous integration with N-Unit automated build testing and Cruise Control.

Technical Activities: Software design and development of the iMerge SoundServer S2000: a high-end audio sound server, incorporating multi-zoned playback, advanced play-list management, metadata network-lookup, and compatibility with third-party audio playback/archive systems. Co-designer of the media management middleware and underlying OODB using "Gang of Four" design patterns involving re-factoring an existing code base into patterns where necessary. XP test driven development, employing N-unit test modules for unit and integration testing and Cruise Control for automated hourly build and integration testing.

Jun 2004 to Dec 2004 *Freelance/ Contract*	### Senior Software Engineer: Motorola, Swindon, England, UK **Technologies:** Windows 2000 / C# / Visual Studio .NET/ COM / SQLServer / ADO.NET / XML / UML / Time-boxed Agile/XP development **Technical Activities:** Software development of Motorola's ASA (Advanced Software Applications) group's IOS Windows Collection software: a data collection and analysis tool for GSM cellular network analysis and optimisation. Extensive data modelling in UML, and C# implementation from pre-defined requirements. Implementation in C# on .NET platform on Windows 2000. Enhancements to existing design and software. Database design using Rational Rose. SQL data access through ADO.NET. Steep initial learning curve and heavy workload with short delivery times.
Feb 2003 to Sep 2003 *Freelance/ Contract*	### Senior Software Engineer: Motorola, Swindon, England, UK **Technologies:** Windows 2000 / C# / Visual Studio .NET / COM / XML / UML / Rational Rose / Rational Clearcase / Rational Clearquest **Technical Activities:** Upgrade of CDMA mobile network analysis software (project: CTPU). Extensive UML analysis/design and C# implementation from pre-defined requirements, to provide newer version of existing software. Implementation in C# on .NET platform on Windows 2000. Technical lead of international integration testing team (Motorola UK, India, Ireland), defining and monitoring network testing across three countries, in accordance with high level quality controlled software processes. Successful delivery of very high quality software. Heavy workload with short delivery times. **Business Achievements:** Identified problems in communication between core business personnel, in-house developers, and offshore subcontractors. Provided mediation services. Attended project management meetings with internal management and offshore contractors to assess progress and provide technical assistance for late deliverables.
Jan 2002 to Jan 2003 *Freelance/ Contract*	### Senior Software Engineer: Xerox Ltd (Global Knowledge and Language Services), Welwyn Garden City, Herts, England, UK **Technologies:** Windows NT / 2000 / C++ / stl / COM / ATL / XML / SAX / UML / HTML / Rational Rose / Visual Studio / Visual Sourcesafe

Technical Activities: Self-managed software development, working from own premises, reporting directly to senior management. Rework of failed offshore software development from requirements stage. Analysis, design and implementation of C++ COM-based data filters including support for XML, HTML, MS Word, SGML, Interleaf, Framemaker, Quark, and Pagemaker formats. Introduced novel ways to reuse developed technologies to provide significant gains on existing asset value.

Business Achievements: I advised a Global Implementation and Integration Manager on defining processes for bridging disparities between business stakeholders, developers and testers. Advised European sub-contract manager on software testing strategies. Defined testing roles for business personnel to improve staff satisfaction. Role involved interaction with wide variety of personnel including translators, middle and senior management. Continuation of previous service - see previous Xerox entry for more details.

Dec 2001

Short term consulting

Duration: 1 week.

IT Consulting: Tiberone Technologies Ltd, Richmond, London, England, UK

Technologies: Windows NT/C++/stl/COM/ATL/Visual Basic/Visual Studio.

Technical Activities: Consultancy and troubleshooting bespoke telephony switching software tools. Conversion of COM components from VB into ATL COM (event driven connection points) to increase software performance. Quick problem analysis and solution delivered successfully.

Aug 2000 to Jul 2001

Freelance/ Contract

Senior Software Engineer: Xerox Ltd (Global Knowledge and Language Services), Hertfordshire, England, UK

Technologies: Windows NT/ C++ /stl / COM / ATL / XML / SAX / UML / Rational Rose / Visual Studio

Technical Activities: Requirements capture, formal analysis, OO UML design and C++/COM implementation of a corporate level human-language translation software suite (project: Globaltrans). Business process analysis and design of large-scale, n-tiered, multi-user, distributed translation system. Intensive client facing role. Large user base. Large development team (30+ personnel). Working under pressure to tight commercial deadlines.

Sep 1999 to Aug 2000

SDLC and Systems Engineer: Graseby Dynamics Ltd,

Watford, Herts, England, UK

Freelance/Contract

Technologies: Windows NT / C++ / embedded software / RS232 / Labview / MFC / MS Visual studio / UML / Rational Rose/ Iterative Agile/XP development cycle.

Technical Activities: Sole software and systems engineer for real-time fluidics control software for an air pollution monitoring system. Working in a large multi-disciplinary engineering team (chemical, electrical, mechanical engineers). Organising and advising on systems and software processes to enhance the client's administrative infrastructure, in addition to real-time embedded systems development.

Oct 1998 to Jul 1999

Full time employment

Software Engineer: Avery Berkel, Edgbaston, Birmingham, England, UK (EASAMS placement)

Technologies: Windows NT / C++ / COM / ATL / MFC / MS Visual studio / USB embedded development.

Technical Activities: Commercial EPOS (electronic point of sale) distributed transaction control system for a large retail organisation. System was designed for scalability and performance. Also designed and implemented a bespoke USB 1.0 printer driver (in C++).

Sep 1996 to Aug 1998

Full time employment

Lead Software Engineer: Marconi Communications Ltd, Marconi Way, Chelmsford, Essex, England, UK

Technologies: Windows NT / C++ / COM / ATL / MFC / MS Visual studio / Borland C++ Builder / RS232

Technical Activities: Design and implementation of client-server remote user interface for wireless data and voice communications device. Also, software implementation of formal protocol specifications for wireless data communications. Lead a small team of engineers from Turkey and mentored in the use of Windows SDK and MFC.

Apr 1996 to Aug 1996

Full time employment

Software Engineer: EASAMS Software Systems, Elstree Way, Borehamwood, Herts, England, UK

Technologies: Unix / C++ / UNIX scripting.

Technical Activities: Pharmaceutical projection system. Scaleable, highly algorithmic, multi-process, high performance system for forecasting usage of pharmaceuticals products. Designed and coded algorithms and distributed performance-critical processes in C++. Small team of senior developers.

Sep 1995 to Mar 1996

Full time employment

Software Engineer: EASAMS Software Systems, Elstree Way, Borehamwood, Herts, England, UK

Technologies: Windows for Work-groups/C++/Visual Studio/RCS version control.

Technical Activities: Designed and developed diagnostic/maintenance sub-systems for the In Flight Aircraft Entertainment System (installed on the new Boeing 777's and retrofitted onto 747's). Large development team (circa 25) and very robust software processes. Excellent introduction to software process control.

Sep 1994 to Aug 1995

Full time employment

Graduate Software Engineer: Logica UK PLC – Great Marlborough Street, London, England, UK

Technologies: Using C++/COBOL/TAL/Unix/VMS

Technical Activities: COBOL developer/tester on a number financial software projects (3 months) including CHAPS. Also developed software on a Reuter's media switch/router in C++as a port with enhancements from VMS to UNIX (9 months).

Sep 1993 to Aug 1994

Freelance/ contract

Lecturer & Project supervisor: Middlesex University – Bounds Green Road, Bounds Green, London, England, UK

Role: Lecturer/Project supervisor in Electronics/Computing/OO/Digital design. Conducted lectures in a variety of subjects to groups of 30-60 students (mainly undergraduates) in large amphitheatres, classrooms and technical laboratories. Devised and managed a 12-week long project in computer programming for an MsC conversion course, as well as a variety of lectures in C++, OO, digital electronics design, and analogue electronics design.

Oct 2000 to Dec 2001

Full time employment

Part Time Lecturer: Oakland's College, Welwyn Garden City, Herts, UK

Role: Tutor/lecturer to groups of 16+ students of all ages. Authored and executed courses in OO/C++/ C. Created original course material based on curriculum standards. Courses are now in print and are now in use as the standard course material for subjects taught. Duration: 3 x 12 week semesters

Higher Education

(1990-1993)

Middlesex University, Bounds Green Rd, London N11, England, UK

1st Class BEng. Hons with Distinction in Electronics Engineering. Awarded Institute of Electrical Engineers Associate membership. Final year distinction for project in Neural Network Image Recognition using standard RAM technology as a neural memory. Elected as Student Representative in the final year acting as intermediary between students and academic staff on a variety of issues.

Further Education

(1988-1990)

Southgate College of Further Education, Southgate, London, England, UK

BTEC National Diploma in General Engineering. A range of course material over two years ranging from mechanical engineering and manufacturing to mathematics, electronics engineering and computer science. Overall merit awarded.

Secondary Education

(1982-1987)

Friern Barnet County School, Hemington Avenue, London, England, UK

9 GCE O levels: Computer Studies (B), Art (B), Mathematics (B), Arithmetic (B), Chemistry(C), Physics(C), English (B), English Literature(C), Geography(C)

References and portfolio available on request, or visit:

https://syntapse.co.uk for general service information.

https://nextdemo.syntapse.co.uk for Next 14, RTK and websocket feature

demonstrations.

https://nextauth.syntapse.co.uk for a fully authenticated NextAuth site.