

Sam Roberts

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Career

Software developer with 20+ years of experience in a variety of industries, languages, and platforms. Consistently develop innovative tools and technologies that are adopted as core elements of my companies' software development and business practices.

Highlights

Multi-language: C, C++, Javascript (server side), Lua, Python, Ruby.

Systems level APIs: event-driven and non-blocking I/O, sockets and low-level network, Linux/UNIX.

Cryptography and Security: implement cryptographic protocols and formats, test security of network protocols.

Open-source: Node.js TSC member, conference speaker, author and contribute to many open-source projects.

History**Senior Software Developer**

IBM Canada, Runtimes (developer.ibm.com/node/sdk/)

October 2018–present

Contribute to Node.js project, primarily in crypto/security, LTS release lines and IBM platform support.

Achievements:

- TLS1.3 support for Node.js.
- Node.js security releases, such as Aug, 2019.
- Member of Node.js Technical Steering Committee (TSC).

Senior Software Developer

IBM Canada, Runtimes (github.com/RuntimeTools)

October 2016–September 2017

Contribute to Node.js project and IBM projects integrating with Node.js.

Achievements:

- Integrating github.com/strongloop/strong-pm with IBM's github.com/RuntimeTools/appmetrics.
- Back Pressure, or, Don't Accept Work Before You're Ready, Node.js Interactive, Oct 2017, www.youtube.com/watch?v=Bz0EkaH4S7Y (also, Nodeconf.eu, Nov 2017).
- Node's Event Loop from the Inside Out, Node.js Interactive, Austin TX, Dec 2016, www.youtube.com/watch?v=P9csgxBgaZ.

Senior Software Developer

IBM Canada, APIConnect (developer.ibm.com/apiconnect)

November 2015–September 2016

Post-acquisition of Strongloop, integrate Node.js runtime technology into IBM's APIConnect management stack.

Achievements:

- Led team of 3 IBM developers to add Node.js runtime management to a WAS Liberty cluster, using github.com/strongloop/strong-supervisor.
- Node.js API Pitfalls: Can You Spot Them?, Node.js Interactive, Portland WA, Dec 2015, www.youtube.com/watch?v=jJaIwea8r2A.

StrongOps Team Lead

Strongloop (strongloop.com)

April 2013–October 2015

Lead StrongOps team, responsible for runtime and deployment management for Node.js applications. Participate in development of management and monitoring solutions for Node.js (strong-pm.io).

Achievements:

- Application management with github.com/strongloop/strong-pm, cluster management with github.com/strongloop/strong-supervisor, and runtime monitoring with github.com/strongloop/strong-agent.

- Maintain and publish Strongloop modules and CLI (github.com/strongloop/strongloop).

Senior Architect and Development Lead

Wurldtech (wurldtech.com)

May 2007–March 2013

Lead a team of eight developers on a Linux-based appliance for automating network security testing of industrial equipment.

Achievements:

- Implement Scrum, and ship product within first year of development.
- Rewrite the network protocol implementation and test framework in Lua.
- Develop tests and Wireshark dissectors for many IPv4 and industrial protocols.
- Write a protocol dissector and rule engine for Linux and VxWorks, as a component of an Intrusion Detection System.

Senior Software Architect

Bycast (bycast.com)

Nov 2005–June 2007

Work on storage grid, a distributed network of redundant, fault-tolerant Linux servers.

Achievements:

- Implement grid communication protocols in Ruby, so Grid QA could be scripted.
- Expose grid capabilities through an RPC-like HTTP/XML API, and rewrite the HTTP server for standards conformance and security.
- Write Lua bindings so grid components could be implemented in a dynamically loadable scripting language, write components with the bindings.

Senior Software Developer

Certicom Corp. (certicom.com)

Oct 2000–Oct 2005

Develop C language cryptographic toolkits optimized for high performance and low memory usage.

Achievements:

- Propose architecture for integrating 3rd party cryptographic support into Certicom's Crypto and protocol toolkits. Proposal adopted as the Crypto-C API and integrated into all products (IPSEC, TLS, PKI).
- Design Certicom's PKI-C toolkit. Implement PKI-C support for: BER/DER; PKCS#8; X.509 certificates; CMS SignedData; PKCS#12/PFX; various RSA, DH/DSA, and ECC key formats.

Software Developer

Cogent Real-Time Systems (cogent.ca)

Oct 1998–Oct 2000

Custom QNX development for clients in C and Gamma (Cogent's LISP-based scripting language).

Achievements:

- Implement QNX's message passing API for Linux as a kernel module, allowing Cogent's tool chain to be used on Linux (opcdatahub.com/Docs/booksr.html).

Development Lead

International Submarine Engineering (ise.bc.ca)

1995–Oct 1998

Manage the maintenance and development of ACE, a component-based, runtime configurable, asynchronous event-based kernel implemented in C++ and used for remotely operated vehicles. Ported ACE kernel to QNX and successfully advocated that ISE transition from OS-less embedded 68K to QNX on x86.

Education

B.A.Sc. in Engineering-Physics, Computer Science Option, 1996

University of British Columbia

Projects

Node.js packages: modern-syslog, ~9K downloads/week (npmjs.com/package/modern-syslog); debuglog, ~1.2M downloads/week (weirdly) (npmjs.com/package/debuglog); strong-supervisor, ~1.7K downloads/week (npmjs.com/package/strong-supervisor); and authored or maintained many more (npmjs.com/~octet).

libnet Adopted this widely used packet crafting and injection library, fixed the known bugs, and re-released. It has been accepted downstream by Debian and Fedora. I am trying to pass to new maintainers. (github.com/libnet/libnet)

luasocket. Reintegrated multiple CVS and Mercurial forks into a single github repo, brought collaborators together, and

then passed project back to original author (github.com/diegonehab/luasocket/graphs/contributors).

Lua bindings: github.com/sam-github/pcap-lua; github.com/sam-github/netfilter-lua; github.com/sam-github/termios-lua; github.com/sam-github/bcrc-lua.

vPim. Ruby support for vCard and iCalendar formats (github.com/sam-github/vpim)

GNU mailutils. Contributed to email address decoding, file locking, SMTP, etc. (savannah.gnu.org/projects/mailutils/).