

**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. Worked remotely since 2013.

**Highlights**

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

*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, authored or contributed to many open-source projects.

**History****Senior Software Developer**

*IBM Canada, Runtimes ([developer.ibm.com/node/sdk/](http://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:*

- Added TLS1.3 support to Node.js ([github.com/nodejs/node/pull/26209](https://github.com/nodejs/node/pull/26209)).
- Coordinate Node.js security releases ([nodejs.org/en/blog/vulnerability/](https://nodejs.org/en/blog/vulnerability/)).
- Member of Node.js Technical Steering Committee (TSC).

**Senior Software Developer**

*IBM Canada, Runtimes ([github.com/RuntimeTools](https://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](https://github.com/strongloop/strong-pm) with IBM's [github.com/RuntimeTools/appmetrics](https://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](https://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](https://www.youtube.com/watch?v=P9csgxBgaZ).

**Senior Software Developer**

*IBM Canada, APIConnect ([developer.ibm.com/apiconnect](http://developer.ibm.com/apiconnect))*

*November 2015–September 2016*

Lead time of 3 IBM developers to integrate Strongloop Node.js runtime technology into IBM's APIConnect using [github.com/strongloop/strong-supervisor](https://github.com/strongloop/strong-supervisor).

*Achievements:*

- Node.js API Pitfalls: Can You Spot Them?, Node.js Interactive, Portland WA, Dec 2015, [www.youtube.com/watch?v=jJalwea8r2A](https://www.youtube.com/watch?v=jJalwea8r2A).

**StrongOps Team Lead**

*Strongloop ([strongloop.com](http://strongloop.com))*

*April 2013–October 2015*

Lead StrongOps team.

*Achievements:*

- Develop deployment, management, and monitoring for Node.js applications ([strong-pm.io](https://strong-pm.io)).
- Maintain and publish Strongloop modules and CLI ([github.com/strongloop/strongloop](https://github.com/strongloop/strongloop)).

**Senior Architect and Development Lead**

*Wurldtech (wurldtech.com)*

*May 2007–March 2013*

Lead a team of 8 developers developing a network security testing appliance.

*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 Lua-based protocol dissector and rule engine for a Linux/VxWorks IDS.

### **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.
- Implement a HTTP/XML API for the grid, and rewrite the HTTP server for standards conformance and security.
- Implement support for grid components to be written in Lua.

### **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:*

- Integrate support for 3rd party crypto libs into Crypto-C API, and standardize across all SDKs (IPSEC, TLS, PKI).
- Design Certicom's PKI-C toolkit. Implement PKI-C support for: BER/DER; keys, certificates, CMS, and PFX.

### **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 as a Linux kernel module and port Cogent's tools to Linux ([opcdatahub.com/Docs/booksr.html](http://opcdatahub.com/Docs/booksr.html)).

### **Development Lead**

*International Submarine Engineering (ise.bc.ca)*

*1995–Oct 1998*

Maintain and develop ACE, a component-based and asynchronous event-based kernel implemented in C++ and used to control remotely operated vehicles. Ported ACE kernel to QNX, and transitioned ISE to using an OS.

## **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](https://npmjs.com/package/modern-syslog)); debuglog, ~1.2M downloads/week (weirdly) ([npmjs.com/package/debuglog](https://npmjs.com/package/debuglog)); strong-supervisor, ~1.7K downloads/week ([npmjs.com/package/strong-supervisor](https://npmjs.com/package/strong-supervisor)); and authored or maintained many more ([npmjs.com/~octet](https://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](https://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/diegonahab/luasocket/graphs/contributors](https://github.com/diegonahab/luasocket/graphs/contributors)).

*Lua bindings:* [github.com/sam-github/pcap-lua](https://github.com/sam-github/pcap-lua); [github.com/sam-github/netfilter-lua](https://github.com/sam-github/netfilter-lua); [github.com/sam-github/termios-lua](https://github.com/sam-github/termios-lua); [github.com/sam-github/bcrc-lua](https://github.com/sam-github/bcrc-lua).

*vPim.* Ruby support for vCard and iCalendar formats ([github.com/sam-github/vpim](https://github.com/sam-github/vpim))

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