

Shane Holloway

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Objective: to deliver products that provide value and joy to users as leader of a dynamic, sharp, engaged, and focused team.

Entrepreneurially minded, diversely talented, and driven software engineering professional. Backed by 25 years of experience in software product engineering, leadership, management, architecture, design, development, deployment, and operations. Expert know-how and continuing interest in asynchronous and distributed computing, network communications, library factoring, and abstraction for component reuse. Highly proficient building systems as a principal engineer, as well as leading and managing technical development teams. Focused on investing in the individuals on and near my teams to grow them both technically and professionally. The ideal position would start with a challenging problem that will improve the world, combined with a smart, energetic team that has the freedom to make it happen.

Technical Interests

- Architecture and implementation of software systems
- Distributed systems, actors, concurrency, and message passing
- Object, functional, and component oriented software
- Dynamic languages and meta-programming
- Visualization and graphics
- Continuous Integration, Testing, and Deployment

Management Interests

- Mentorship of software engineers and technical managers
- Technical management, coaching, and mentorship
- Design Thinking & Service Design approaches to product development
- Business roadmap, vision, and planning
- Entrepreneurship, measurement, and marketing

Talks

[Meetings: Good or Bad?](#) on September 24th, 2019

Containers & Docker: The Evolving Story on March 7th, 2014 at Amazon internal conference. 4.5 of 5 stars, 476 views.

[HTML5 Platform — a 10K Foot View](#) on July, 2013 at [CS OSS Meetup Group](#)

[Meta: Programming, Objects, and Classes](#) on April, 2012 at [CS OSS Meetup Group](#)

Manager

Lifetime: 7 development teams, 29 direct reports, 4 interns, 6 contractors. Simultaneously: 11 directs in 2+ teams over 8 products.

Tech Stack

JavaScript — over 15 years

Python — over 15 years

C/C++ — over 15 years

Platforms : web, desktop, server, docker, container, embedded

HTTPS : v1.1 & v2, CORS, CSP, TLS, STS, Caching, reverse proxy, api gateway

Web : DOM, HTML5, CSS, WebSockets, Service Worker, Web Workers, Web RTC

APIs : OpenGL, libuv, NumPy, SciPy, OpenAPI

AWS : Lambda, SNS, SQS, SWF, DynamoDB, S3, RDS, IAM, CloudWatch

Database : SQLite3, PostgreSQL, Couch, Rethink, Arango, Level, MySQL, Redis, MemCache

Tech Kit

SCM : Mercurial (hg), Git, SVN

Editors : VIM, Atom, MS Visual Studio

Server : Docker, Caddy, Nginx, Traefik

Server-JS : Node.js, Express, Connect

OS : Linux, Mac, Windows, iOS

Open Source 2002–2022 (19 years)

In 2002, I began publishing open source with the [RuneBlade Foundation](#) (Python 2, *BSD License*) and subsequently the [TG Framework](#) (Python 2, *BSD License*) in 2004. I enjoy the craft of designing and building software libraries; doing so for open source is a fulfilling expression. When others reuse or simply learn from what I've made, I feel like I've helped someone be just a bit happier. Regrettably, marketing my open source creations has not caught my interest, leaving my projects obscure.

From 2002 to 2011, my open source was focused around [Python 2](#), [wxWidgets](#) GUI toolkit, desktop operating system capabilities, networking, and OpenGL with NumPy. From 2011 to 2016, my focus shifted to web browsers as the GUI, *JavaScript*, *HTML5*, and *CSS*, and [NodeJS](#). From 2016 to present, my focus has broadened: my [JSY dialect](#), [message passing architecture](#), and modern JavaScript module libraries for algorithms and data handling. I have open source in *Python*, *JavaScript*, *JSY*, *C*, *C++*, *shell scripts*, and *Dockerfiles*, variously under BSD, MIT, or ISC licenses.

Open Source

js [jsy-transpile](#)

js [msg-fabirc-core](#)

js [roap](#)

js [@phorbas/opaque](#)

js [@phorbas/store](#)

js [@phorbas/hamt](#)

js [imm-dom](#)

js [cbor-codec](#)

js [csv-iter-parse](#)

js [u8-mqtt](#)

js [u8-mqtt-packet](#)

js [hashbelt](#)

js [u8-utils](#)

js [fate](#)

C [nekoite](#)

C++ [uvobj](#)

py [TG.quicksilver](#)

py [TG.helix](#)

py [TG.blathernet](#)

py [TG.gccxml](#)

py [TG.ext.openal](#)

py [TG.ext.opengl](#)

py [TG.ext.freetype2](#)

py [TG.framework](#)

py [RuneBlade](#)

Experience 1996–2022 (25 years)

2021 (6 months)

Digital Service Expert at *United States Digital Service (USDS.gov)*

I had the privilege of serving the American people on a 6 month tour. As an engineer on a multi-disciplined team of designers, engineers, product, and procurement experts, we dove deep into the Unemployment Insurance service experiences across our 50 States and 3 territories. Our [discovery sprint](#) focused on uncovering and advising where application of modern design and technology could result in better service delivery to the American people while at the same time addressing identity theft related to Unemployment Insurance fraud. The sprint culminated in a report and briefing to the [National Economic Council](#) and [Gene Sperling](#) as part of the \$1.9 trillion [American Rescue Plan Act of 2021](#).

Tech Stack

Techniques : Service Design, Design Thinking, Ecosystem Map, Ethnography, Monte Carlo modeling
Web : HTML5, CSS3, USWDS, Liquid
Lang : Python, JavaScript

Tech Kit

Federal Government : EOP:OMB:USDS, USDOL:OSEC, CDC:OCOO:OD
Refs : IAL2, AAL2, NIST SP 800-63, FRVT 1:1 & 1:N, NASA SEWP
Meeting : Zoom, Slack, MS Teams
OS : Web, Mac OS, Windows, iOS

2016–2022 (6 years)

Chief Development Officer, Principal Engineer, Principal Architect at *ScribeRule (Encipher)*

In the Chief Development Officer role, I worked with the CTO and CEO to establish product vision, development direction, technical platform, and high-level requirements. Using a kanban-based agile development process, our 10-person technical startup team defined and built:

- microservice-based distributed system using Docker Swarm
- web-based collaboration interface for use on mobile and desktop.
- a Microsoft Word add-in using .NET
- CI/CD workflows using Earthly, Gitlab-CI, AWS S3, and Docker Swarm

In the Principal Engineer and Architect roles, I led, designed, and developed a proprietary cryptography API platform targeting deployment in both cloud-based hosting as well as on-prem air-gaped customer data centers. I developed and implemented ~90% of the company's core patent-pending intellectual property and defined the cryptographic data security architecture. Embracing web-based ecosystems, the front-end leveraged standards-based web components, web sockets for bidirectional live updates, OpenAPI specified public REST APIs, and JAMStack delivery of APIs alongside static web content. The back-end containerized services deployed to Docker Swarm, Nomad, or Kubernetes depending on customer requirements. To deliver baseline functionality, we leveraged excellent third party container images: CouchDB, PostgreSQL, Caddy, eJabberD XMPP, Mosquitto MQTT, DexIDP, and OpenLDAP.

Tech Stack

Lang 1st : JSY, JavaScript, Babel, ES6+
Lang 2nd : Python 2.7, 3.5, Bash
Web : Web Components, Shoelace 2, ReactJS, Semantic-UI, Express
DBs 1st : CouchDB, ArangoDB
DBs 2nd : LevelDB, PostgreSQL
DBs 3rd : RethinkDB, Redis, Memcache

Tech Kit

AWS : S3, DynamoDB, Route53
Docker : 1.12..20.10, Swarm
CI/CD : rollup, earthly, Gitlab-CI, multi-stage dockerfile
Hosting : Digital Ocean, Vultr, Proxmox
Linux : Debian, Ubuntu, Alpine
Windows : 7, 8, 10, 11
Services : Caddy, Prometheus, Grafana
Editors : VIM, Atom
SCM : Mercurial, Git

2013–2016 (3 years)

Software Dev. Manager (SDM) at *Amazon Web Services (AWS, Amazon.com)*

As SDM, I led two teams of software engineers (SDEs), owning 8 internal developer productivity tools, including multiple code browser, code review, code search, and code sharing products. All products operated at 99.9+% availability, with deep operational scrutiny for each outage. Targeting enterprise customers, we prioritized security, operational monitoring, workflow integrity, integration with other Builder Tools and company systems, and customer experience. Products include website and command line user interfaces, multiple supporting services, and AWS databases.

- 8 internal products
- 7K-25K internal customers
- 99.9+% availability
- AWS CodeCommit features
- \$12K/month server spend
- 36 business SMART goals

As SDE for the initial 5 months, my team delivered a popular company-wide project bootstrapping tool, helping customers focus on building their ideas by setting up all the infrastructure systems on their behalf. Over 20K projects and 100K shared libraries have been created with this tool.

Manager

2+ SDE teams with 11 SDEs
2 SDE promotions, 3 hires, 2 exits
4 SDE interns hosted
8 software products

Tech Kit

Web : HTML5, ES6, CSS3, LESS, AngularJS, jQuery, Ruby, Rails, Node.js
AWS DB : DynamoDB, S3, RDS MySQL, RDS PostgreSQL
AWS : Lambda, SNS, SQS, SWF, IAM, CloudWatch, CloudTrail
Linux Server : Apache, RHEL5, ALLinux
Tools : Git, VIM, tmux

2009-2013 (5 years)

CEO, Entrepreneur, Co-founder at *TechGame Networks, LLC.*

In 2009, I returned to TechGame to create and sell niche software products, supplementing my income with software consulting. I invested significant time into learning the multifaceted roles of entrepreneurship, small business administration, online marketing, and consulting. New skills included applied analytics, metrics, A/B testing, email marketing, retargeting, advertising, IT operations, payment processing, email notification, development and administrative outsourcing.

In 2012, I created **Bellite** as a software toolkit to help developers and web designers deliver hybrid desktop applications on both Windows and Mac OS X using tools they are already familiar with. (Modern examples include [Electron](#) and [NW.js](#).) In June 2013, Google announced end-of-life of Google Chrome Frame, a core component of Bellite's architecture.

Consulting continued with AbleLink Technologies. As a subcontractor for Johnson Controls in 2012, I deployed two embedded solid-state Linux devices enabling a trusted fire alarm hardware monitor to integrate with a modern monitoring system by transforming the RS-232 protocol to TCP/IP.

Tech Stack

Lang 1st : Python 2.7, JavaScript, CoffeeScript
Lang 2nd : C, C++, Objective C++
Web : HTML5, CSS3, Stylus
GUIs : Cocoa, Win32, WTL, ActiveX
Misc : JSON-RPC2, libuv

Tech Kit

Server : Nginx, Node.js
Linux : Ubuntu, Arch
Windows : XP, 7, 8
Mac OS X : 10.6, 10.7, 10.8, 10.9
Editors : VIM, Xcode, MS Visual Studio 2010
SCM : Mercurial, Git
Services : Stripe, Mandrill
Analytics : KISSMetrics, MixPanel
Pixels : Pixelmator, ScreenFlow, Motion

2005-2008 (4 years)

Lead Software Engineer at *AbleLink Technologies*

Lead developer of more than 10 Phase Is, 5 Phase IIs, and 2 FastTrack research grants for the Department of Education and the Department of Health and Human Services focusing around the topic of technology accessibility for the cognitively disabled. SBIR grants help fund high-risk project research and development from small businesses, and are generally very fast-paced software engineering projects with research-vetted results. During the second phase of these research grants, we transformed preliminary studies into feature rich commercially-available products tailored for the cognitive disability market. Combining the gamut of delivery platforms with the ease of use required for our primary cognitive disability audience proved very challenging and rewarding, fostering expertise in a wide variety of languages and technologies from cloud to embedded platforms.

Tech Stack

Lang 1st : Python 2.4, 2.5, 2.6, 2.7
Lang 2nd : C, C++, JavaScript, Smalltalk, ActionScript
GUIs : wxWidgets, QT4, QT5, OpenGL
Web : HTML5, CSS3, Jinja2
DBs : SQLite3, QuicksilverDB, ZODB
Services : AWS S3
Libs : NumPy, jQuery, OpenGL
Formats : Pickle, JSON, XML

Tech Kit

Windows : XP, Vista, 7, 8
Windows Mobile : 2003, 5, 6
Mac OS X : 10.6, 10.7, 10.8
iOS : 3, 4, 5
Tools : Parallels
Editors : VIM, MS Visual Studio 2003
SCM : Mercurial, SVN

2003-2005 (2 years)

Lead Software Engineer, Co-founder at *TechGame Networks, LLC.*

TechGame was launched with two co-founders to develop software products supported by software consulting cashflow. With Redstone, I continued performing custom engineering and integration services for the City of Los Angeles security center and the Ontario International Airport in California. With Agilent Technologies, I assisted development of a new OpenGL components and resolved a C++ threading integration issue. With AbleLink Technologies, I helped advance their SBIR research grants, helping people with intellectual and cognitive disabilities through software.

Tech Stack

Lang 1st : Python 2.3, 2.4
Lang 2nd : C, C++, Smalltalk
GUIs : wxWidgets, OpenGL
DBs : SQLite3
Formats : XML, JSON

Tech Kit

Windows : 2000, XP, Vista
FreeBSD : 5, 6, 7
Editors : VIM
SCM : SVN

2001-2005 (4 years)

Lead Software Engineer at *Redstone (ICCE Technologies)*

Co-architected, designed, and lead the development of a flexible security monitoring system for geographically distributed field hardware devices. The system interface enabled shift operators in security centers to monitor, view, and control physical security devices installed across their physical property: alarms, motion sensors, fixed cameras, pan-tilt-zoom devices, door locks, and KVM connected computers. We delivered and integrated the system into the network operation center of Hughes Network Systems, the police operations center of the Ontario International Airport in California, and the security center of the City of Los Angeles. Operators were able to control up to 30 cameras simultaneously from a single interface, use topological assisted navigation among several hundred cameras, monitor integrated sensor network of several thousand alarm points, and point-and-click control of actuators like door locks and PTZ cameras.

Tech Stack

Lang : Python 2.0-2.2, C, C++
GUIs : wxWidgets, ActiveX, OpenGL
DBs : SQLite3, OODB
Protocols : Jabber, XMPP, RS-232, TCP & UDP
Formats : XML, SVG, proprietary

Tech Kit

Windows : 98, NT 4, 2000, XP
Editors : VIM
SCM : SVN, CVS

1996–2001 (5 years)

Software Engineer at *Decision Science Applications (SM&A, Emergent)*

Contributing developer on more than 12 successful HP/Agilent Technologies products, including design and implementation of two interactive scientific graphing components, interaction-based calculation algorithms, and infrastructure design and construction. During my capstone project at Emergent, I served as both a software architect and a key developer for Agilent MUI, including system design, framework and infrastructure, data management, algorithmic development, and graphical interfaces.

Tech Stack

Lang : C, C++
GUIs : MFC, WTL, ATL, ActiveX, OpenGL
Protocols : HPIB, GPIB, RS-232
DBs : MS SQL Server, MFC/OLE

Tech Kit

Windows : 3.1, 95, 98, NT 4, 2000
Editors : MS Visual Studio 6
SCM : MS Visual Source Safe

Education and Achievements

Bachelors of Science in Computer Science at *University of Colorado*

1998–2000 (2 years)

- Minor in Mathematics, Minor in Economics
- First in Class (GPA: 3.982; GRE: 790/800/640)
- Outstanding Undergraduate Student, *College of Engineering and Applied Science*.

Tech Stack

Lang : LISP, Scheme, Pascal, C, C++
Network : BSD sockets, TCP
Graphics : OpenGL 1.1, DirectX 1

Eagle Scout at *Troop 287, Boy Scouts of America*

1991–1997 (7 years)

- Order of the Arrow

Volunteering 1997–2022 (23 years)

at *Boy Scouts of America*

- Assistant Scoutmaster, *Troop 404*, 2022 (7 months)
- Supernova Counselor, *Pikes Peak Council*, 2021–2022 (2 years)
- Committee Chair, *Pack 229*, 2018–2022 (4 years)
- Den Leader, *Pack 229*, 2018–2020 (2 years)
- Assistant Scoutmaster, *Troop 287*, 1997–2006 (9 years)

at *Soifer Math Olympiad*

- Problem Committee, 2021–2022 (2 years)
- Senior Judge, 2001–2022 (20 years)

Additional roles

- Committee Member, *Dangerous Man Conference*, 2010–2011