Michael Stone

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Trajectory

^ = link

Sabbatical	github.com/mstone/depict^	2022
Chief Architect for Information Security	*Akamai Technologies, Inc.*	2009-2021
Software Developer + Release Manager	*One Laptop per Child*	2007-2009
BA with High Honors, Math & Statistics + English	*Swarthmore College*	2007

Accomplishments

As the Chief Architect for Information Security at Akamai, *I led, sponsored, and supervised:*

...Akamai's technical security approach. As one example of my leadership, and contrary to conventional wisdom at the time, Akamai bet on STAMP^ for overall *system safety* across the company, leading competitors in this area by 10 years. This non-obvious choice helped preserve the company and the well-functioning of the Web through 4x growth of the company, exponential growth of traffic served, and the challenges of the early years of the COVID-19 pandemic.

As a People Manager and Director at Akamai, *I supported and developed:*

...eight staff directly and many others elsewhere in the company through example and influence. Since working with me, these immediate colleagues have been promoted to titles including Senior Researcher, Architect, and Senior/Principal/Chief Architect. In addition to being promoted, several of these colleagues have also ultimately been hired into broader roles at Akamai and at other companies.

As a Process Owner and Change Manager at Akamai, *I overhauled:*

...Akamai's approach to technical incident & crisis management. Here, I introduced new training and 'blame-aware' retrospectives, built new tooling, evolved incident process governance, adapted to global regulatory changes, and lead incident reviews that changed the direction of the company.

As a Systems Architect at Akamai, *I convened and led:*

...Akamai's first API working group, to facilitate a company-wide transition to "open the company" by providing uniform customer-facing APIs for services by default. Also, working within my organization, I designed and built valuable individual technologies including a codesearch system trusted by incident responders, a log search prototype that proved to the responsible engineering team that Akamai's logs could reasonably be searched and indexed, the vscan malware scanning system that scanned Akamai's production storage array for JavaScript malware following Operation Aurora, and the incidents dashboard used daily by Akamai's incident responders to maintain situational awareness.

As a Security Researcher and Incident Responder, *I personally:*

...provided expert security advice for dozens of Akamai systems including during internet-wide security crises like Heartbleed and Shellshock. I then joined and then later led Akamai's 24x7x365 on-call team of "incident responders of last resort" who are trusted to steer the company through the first minutes of problems of any scale occurring anywhere on the company's production networks.

As a Release Manager at OLPC, *I launched:*

...a new release process that shipped changes that closed approximately 1,000 tickets, including a complete UI redesign, over the following 34 weeks via an open process on the internet. The release shipped within 6 weeks of the target month to positive reviews on Amazon and in the OLPC software community, and incorporated contributions from dozens of partners and community members.

As a Software Developer at OLPC, *I designed and shipped, in the open:*

...portions of OLPC's "Bitfrost" security system including its activity isolation framework, parts of its software theft deterrence system, and its secure update system. This work addressed the technical problem of safeguarding the education of hundreds of thousands of children and the commercial problem of convincing governments to purchase Linux-based educational laptops from a startup in 2007.

While on sabbatical, *I built:*

...depict^, a tool to help people who need to communicate about complex systems with pictures – while broadening my skills with respect to complementary business functions like user and market research, marketing, customer development, and product engineering.

Talks

As a Speaker, *I presented:*	venue		year
STAMP at Akamai^	MIT STAMP Workshop & internally	*invited*	'20
System Safety ∩ Psychology^	Tufts PSY 53, *Engineering Psychology*	*invited*	'18
Keeping Watch	Akamai Program Management Summit	*invited*	'17
An Atlas of Systems^	MIT STAMP Workshop		'13
Systems Thinking + Web Security^	MIT STAMP Workshop		'10

Patents

US20150381586A1^ "Splicing into an active TLS session without a certificate or private key" '14

Technical Projects

As a Technologist, *I built:*		languages	year
rainbow^	an isolation shell for app sandboxing	Python, C	'08
olpc-update^	a whole-OS atomic update algorithm + inspiration for ostree^	Python	'08
triagebot^	a grammar-based IRC bot for release engineering coordination	Python	'08
dnshash^	glibc NSS plugin for hashing DNS names to IPv6 addrs	C	'09
vscan^	virus detection for large storage arrays, sold to a customer	Python, C++, Make	'10
log search	a scalable distributed system for searching PB of logs	Haskell	'11
incidents	a coordination and observability tool for incident responders	Go, R, Rust, JS	'14 -21$^+$
codesearch	a precision search tool for engineers and incident responders	Go, bash	'14 -21$^+$
focus^	an experiment in real-time collaboration	Go → Rust, Coq	'15
szita	a SwiftUI app for finding misplaced files	Swift, SwiftUI	'19
depict^	picture systems, tell stories	Rust	'22

Selected Skills & Conversation Topics

legend ⁝current, ⁝recent, ·nascent/lapsed

programming	⁝Rust, ⁝Nix, ⁝Go, ⁝C, ·C++, ⁝R, ⁝Python, ·Swift, ·Haskell, ·PHP, ·Lua, ·VHDL, ⁝TEX, ⁝PyTorch
web tech	⁝HTML, ⁝CSS, ⁝SQL, ⁝JS, ⁝XML, ·RDF, ⁝DNS, ⁝HTTP, ⁝TLS, ·SMTP, ·IMAP, ·XMPP, ·Atom, ·ActivityPub
software tools	⁝git, ⁝sapling, ⁝pijul, ⁝p4, ⁝Make, ⁝autotools, ⁝klee, ⁝LLVM IR, ·CPSA, ·Coq, ·Alloy, ⁝Minion, ·Z3, ·Agda
networking	·IEEE 802, ·802.11b/g, ⁝IPv4, ⁝IPv6, ⁝TCP, ⁝UDP, ·AWS, ·Azure, ⁝GCP
systems	⁝STPA, ⁝CAST, ⁝intent specifications, ⁝asking good questions, ⁝finding answers, ⁝history, ⁝Wardley maps
math	⁝algebra, ⁝real analysis, ⁝topology, ⁝probability, ⁝statistics, ⁝queueing theory, ·control theory, ⁝category theory
leadership	intent, growth, partnership, credit, blame, delegation, incentives, negotiation, direction-setting, planning
process	dashboards, roadmaps, ticketing, announcements, workflows, service catalogs, program documentation
governance	authority, responsibility, supervision, reporting, notice, forum, stakeholders, (in)formality, territory & terrain
inspirations	⁝Leveson, ⁝Rickover, ·Boyd, ⁝Grove, ⁝Marquet, ⁝Argyris & Schön, ·Hicks, ·Schwartz, ·Hogan, ⁝Ellis