

PROFESSIONAL EXPERIENCE

CircleCI

June 2019–Present

At CircleCI I help lead the rapidly growing Platform organization, originally as the founding member of the *Backplane* developer productivity team, and more recently as the architect and technical lead overseeing the larger Infrastructure and Tooling group.

Senior Staff Software Engineer

- Currently serving as architect and technical lead for the five teams comprising the Infrastructure and Tooling group.
 - Performed exploratory research and prototyped new tools and services in collaboration with engineers from teams within my purview.
 - Mentored and paired with Staff-level engineers through regular 1:1s.
 - Authored and reviewed design documents.
- Established the *Backplane* team with the mission of “eliminating development toil”.
 - Wrote charter laying out the mission, scope, and goals of the Backplane team.
 - Grew team from 1 to 4 Staff-level engineers.
 - Acted as *de facto* product manager.
 - Implemented data-driven strategy using KPIs to track library adoption and time-to-deliver.
- Designed and implemented libraries, tools, and services to support internal teams.
 - Built *clj-parent* and *deps-plus*¹, a suite of tools which addressed systemic reliability and productivity challenges around dependency management in our Clojure services.
 - Built *cci-synthetics* to track CircleCI performance and reliability over time by continuously triggering CI pipelines and collecting metrics summarizing their execution.
 - Designed, built, and productionized distributed tracing infrastructure and libraries to improve production observability.
 - Built *trace-logger* and *Dependency Explorer* to provide an interactive, living alternative to static service maps/architecture diagrams, for use by internal engineering teams in onboarding, incident response, and technical planning.
 - Built *backplane-tools* to facilitate code search and modification across CircleCI repositories, and which included *rg-clj*, a Clojure code search tool focused on fast, interactive usage and accurate resolution of imported symbols.
- Supported merger and acquisitions activities, including the CircleCI acquisition of Vamp, a release automation product, by contributing to due diligence and leading the effort to adopt Vamp internally.
- Participated in incident response, post-incident investigation, and the reviewing of incident reports.

¹<https://github.com/circleci/lein-deps-plus>

PROFESSIONAL EXPERIENCE (CONTINUED)

Bronto Software/NetSuite/Oracle

August 2012–June 2019

During my seven years at Bronto, I played a key role in helping scale both its engineering organization and product by leading the development and adoption of technologies, standards, and best practices to support Bronto's transition to a service-oriented architecture.

Principal Software Engineer/Team Lead, Infrastructure Team (April 2018–Present)

- Formed Infrastructure team to grow and support Bronto's development platform including core libraries, frameworks, core services and PaaS components.
- Led Bronto adoption of gRPC through the development of internal support libraries, new project template integration, operational support, and user documentation.
- Designed and implemented backend deployment systems supporting Bronto's *Micro Frontend* (MFE) architecture.

Principal Software Engineer, Architecture Team (June 2017–April 2018)

- Led adoption of *Nomad* as Bronto's container orchestration platform.
- Built *Nomad Deployer*, a deployment service integrating Nomad with existing Bronto deployment services and supporting the containerization of existing "Trebuchet-compatible" services.
- Built *Nomad UI*, a web UI for Nomad Deployer, using Java and Vue.js.

Senior Software Engineer, Architecture Team (January 2015–June 2017)

- Built *TattleTail*, a high-throughput event logger persisting Bronto's internal event stream to HDFS, enabling data analysis, production investigation, and data repair.
- Led design of *Trebuchet*, a system for automating deployments of Bronto services to VMs.
- Led widespread adoption and integration of the Dropwizard application framework at Bronto.
- Drafted outbound open-source policy and participated in outbound open-source pilot program development at NetSuite.
- Collaborated with Bronto development teams to author and review design documents.

Software Engineer (August 2012–January 2015)

- Built *Spew*, a scalable, distributed AMQP-like message broker handling over 1 billion events per day.²
- Built *bronto-redis*, a Redis support library including an async Redis client built on Java NIO and an advanced reliable work queueing implementation.
- Built *Chunk*, a Java framework for defining and serializing immutable records.
- Automated build process of full-stack development environments used by developers and QA.

RootBSD/Tranquil Hosting

May 2007–July 2009

Developer/System Administrator

- Launched RootBSD, a FreeBSD hosting provider offering virtual private servers.
- Deployed and administered a Xen cluster to host FreeBSD virtual machines.
- Designed and implemented a distributed application to manage VMs and Xen hosts.
- Wrote FreeBSD kernel patches and performed kernel debugging.
- Supported customers via phone and email.

²Presented at WebExpo 2018 as "1 billion events per day: Lessons learned building a distributed message broker"

SKILLS

- Understanding failure modes in complex systems.
- Building scalable and performant network services.
- Diving down the stack into networking or kernel internals when necessary.
- Increasing **developer productivity** through tooling, libraries, and standardization.
- Prioritizing **developer experience**.
- Working with concurrent systems and **concurrency** primitives.
- Working with and building **distributed systems**.

TECHNOLOGIES

- Languages – Strongest in **Java**, **Go**, **Bash/sh**, **Python** and **Clojure**; actively learning **Rust**; previous experience in **C**, **PHP**, and assembly (x86 and MSP430); enough **HTML**, **JavaScript**, and **CSS** to be dangerous.
- Other software – Most recently **Kubernetes**, **AWS EC2**, **Terraform**, **Vault**, **Docker**; previously **Nomad**, **Consul**, **HAProxy**, **ZooKeeper**, **Hadoop**, **Puppet**, **Ansible**.
- Datastores – Most recently **PostgreSQL**, **Redis**, and **MongoDB**; previously **HBase** and **MySQL**.
- Operating Systems – Linux (Debian and RHEL based), BSD, macOS.
- Development and CI – Git, Maven, Leiningen, CircleCI, GitLab CI.
- Debugging and diagnostics – tcpdump, strace, nsenter, iproute2, jstack, jcmd, other common command line tools.

EDUCATION

B.S. Computer Science
B.S. Applied Mathematics
Budapest Semesters in Mathematics

North Carolina State University
Raleigh, NC

OTHER ACTIVITIES

Underwater Robotics Club, NC State University

January 2009–July 2012

President 2010-2011, Member 2009-2011

- Designed autonomous underwater robot *Seawolf* for the RoboSub competition.
- Led group of 12-15 students as club president.
- Designed and built *Seawolf Video Router (SVR)*³, a high-performance, low-latency video streaming server. SVR became part of the vision processing software stack in 2011.
- Designed and built hardware and software systems to allow *Seawolf* to track an acoustic pinger underwater.

³<https://github.com/ncsureobotics/svr>