

STEVAN DEDOVIC

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Multidisciplinary technologist and computational artist interested in working on meaningful and worthwhile projects. Looking for a challenging, cutting-edge environment in which to focus on teaching and technical pursuits. Accomplished in wide range of responsibilities from software development, deployment, operation to IoT software/hardware integration to conducting work with customers, distributors, and investors. Self-driven and eager to create. I prefer vim.

<u>Languages/Environments</u>	<u>Cloud Platforms</u>	<u>IoT/Web Technologies</u>	<u>Misc.</u>
<u>Python:</u> Flask, Django, Scipy, PyPi	<u>AWS:</u> SQS, S3, Kinesis, EC2, IAM, CloudFront, KMS, Route53	<u>SQL:</u> Postgres, BigQuery, SQLite	<u>OS, Distros:</u> NixOS, Arch, Ubuntu, Debian
<u>Javascript:</u> TypeScript, Node.js, React	<u>GCP:</u> GCS, Pub/Sub, BigQuery, AppEngine, GCR, IAM	<u>NoSql:</u> Elasticsearch, MongoDB	<u>Hardware:</u> PCB Development, Digital Electronics, Prototype Fabrication
<u>JVM:</u> Clojure Scala, Java, Spring	<u>CloudSQL, GCE, Stackdriver</u>	<u>CI:</u> Jenkins, Gitlab-CI, Circle-CI	<u>Softwares:</u> Fusion 360, Inventor,
<u>Other</u> Rust, Nix, Terraform, Bash CMake, CUDA C++, C	<u>Azure:</u> Azure Search, AzureAD, CosmosDB, Azure Functions	<u>Queues, Logs:</u> Kafka, KafkaConnect Kinesis, Pub/Sub RabbitMQ, SQS, SNS	Photoshop, Illustrator, Davinci Resolve, Ableton
	<u>Digital Ocean:</u> Apps, Compute, Databases		GIMP, Inkscape Bitwig Studio

WORK EXPERIENCE

New Relic

2021 – Present

New Relic is a global leader in telemetry and performance monitoring. Working on a small team, my focus was on backend performance, rolling out new user-facing features, developing internal tools and high-performance GraphQL APIs. New Relic operates at a massive scale, and as such, decisions were data driven and developed methodically.

- I was responsible for ensuring our company-wide Python was FIPS-compliant, which included proving all runtime calls used the proper OpenSSL library and compiling Python with certain security flags configured properly.
- I lead and developed a novel Root Cause Analysis system based on a research paper. This included a Python prototype, mathematical-soundness testing, and operating a closed beta with a high-impact customer.
- I oversaw designing, developing, and maintaining a set of new GraphQL APIs on top of our existing product features. This included developing schema definitions driven by the needs of other teams and our own frontend engineers, developing a greenfield Spring-based service, deployment, and heavy performance testing plus iteration.
- We take performance and service health very seriously, and, to that end, migrated our alerting and monitoring over to Terraform. I oversaw pieces of this migration and submitted tickets and Pull Requests to New Relic's public-facing Terraform SDK and Go SDK to fix outstanding bugs that I encounter in using our tooling.

Private Consulting

2017 - Present

I operate a small number of consulting and contracting gigs. Responsibilities include event planning, budgeting, contract negotiation and development, and custom software implementation.

- Working as part-time Elasticsearch consultant and implementation specialist. Worked remotely in off hours of Q1 through Q4 2020. Interfaced with client directly in regular meeting and planning sessions.
- Joint project with local manufacturing company to add business intelligence to their subsidiaries' operations.
- Created and operated a two-day art and jazz show highlighting local artists, including myself, for profit.

Dina (PreparedHealth)**2018 - 2020**

Dina is a small VC-funded health-tech startup formed in 2015. Reporting directly to the CTO, worked full time with role as data ingestion, automation, and site-reliability engineer. Focus on stability and security due to HIPAA, HITECH regulations, handling of PHI and PII. Managed company infrastructure on Amazon Web Services, Google Cloud Platform, and Azure.

- Ran data ingestion and client interoperability efforts by architecting and implementing a near real-time data ingestion pipeline to process live hospital feeds from multiple clients in a safe, reliable manner. Work included writing HTTP API's, setting up VPN tunnels, rolling out a log-based data processing architecture, implementing CI/CD, and setting up monitoring and alerts for high observability.
- Owned, managed, and provisioned infrastructure for the engineering org, including the introduction and migration to Terraform. Managed IAM roles/policies across all cloud providers. Instituted process around Incident Management and Production Change Management as way to track issues, SLAs, and stabilize client-facing environments.
- Heavily involved in production engineering and site reliability efforts. Work included standardizing logs, implementing tracing, developing monitoring, alerts, and thresholds around application health.

Uptake**2015 - 2018**

Uptake is a \$1B+ valued PE-owned leader in IIoT predictive analytics. Worked full time, initially on R&D under the CTO, and later transitioned to an enterprise back-end team. Responsible for special projects and developing core platform services. Lead multiple projects and teams with my focus on engineering education, architecture, and collaboration.

- Lead multiple projects from a product perspective: defining and planning out work, tracking progress, and working with engineers to ensure delivery. Largely focused on working with internal consumers to ensure proper integration. Filled in gaps where necessary.
- Worked on R&D projects with short development cycles mostly focused on mobile applications. Directly dealt with industry leads to define requirements, UX to develop mocks/designs, and back-end engineers to produce custom API's. Worked on Android in tandem with iOS developers.
- Lead team of 10 engineers to develop and maintain core API's. Large focus on testing, maintainability, and production readiness. Worked on producing internal software libraries, defining service interfaces, and creating backend best practices.
- Involved in engineering education efforts focusing on architecture, code review, and testing. Lead documentation and code health improvement efforts. Started cross-team collaborations that included QA, Automation, and SREs.

PERSONAL PROJECTS

Open Source

2019 - Present

Migrated focus of a portion of my free time to contributing to open-source software projects. This includes development of new software libraries and tools along with bug fixes, added features, and maintenance of existing projects.

- [artlib / curand-clj](#) – various clojure libraries for making generative art and using CUDA, cuRAND
- [Inkscape](#) – upgraded core Inkscape libraries to Python 3. This included a full re-write of the CMake files, support for multi-arch compilation, and an upgrade of the CI Docker containers project.
- [clipper-py](#) – developed a set of Python 3 bindings to a popular polygon clipping and offsetting library, Clipper. Published to PyPi. Was for use in my own art projects.
- [option-monad-ts](#) – ported the Option types from Scala to Typescript. Published to NPM, hosted on Github with automation using Github-CI.
- [svgview](#) – wrote a feh-inspired SVG rasterizer and viewer with automatic reloading and filesystem watching in Rust.

Generative and Computation Art

2018 - Present

Developed a healthy obsession towards generative and computational art.

- Hired at the end of 2023 as a guest lecturer the University of Oslo's Creative Computing Hub Oslo group to write and record a tutorial for students in which I walk through the development of an application for creating generative artworks.
- Work freelance as a video editor for indie music videos
- Paired with an L.A. based artist to develop a generative toolkit for creating visual art based on artist's previous work. Premiered at NFT Art Berlin in 2022.
- Currently developing CUDA-based generative 2d rendering engine modeled after existing "sandpainting" techniques pioneered by Jared S Tarbell of Etsy fame and Anders Hoff of Inconvergent. The algorithms are executed on specialized General-Purpose GPUs due to extreme computational cost and performance benefits.
- Developing and using a Python based computational geometry toolkit for SVG based art.
- Created a cellular automaton operated MIDI sequencer that runs with a Novation Launchpad as a UI for interfacing with a Eurorack modular synthesizer. The application was deployed on a Raspberry Pi device for portability.
- Currently building a rotational CNC plotter for canvas paintings. Learned metalworking and milling along with other manufacturing skills at a local makerspace. Developing custom hardware to operate rotational motors at high speeds based on the Beagle Bone Black, using Rust and a cross-compilation toolchain in Docker.

Homelab

2018 - Present

For fun I operate and hack on a small homelab setup.

- Machines: 2 bare-metal servers, one is a Dell PowerEdge and one is a Supermicro password cracker, a handful of RaspberryPis for 3d Printer monitoring, cameras, and some cloud compute. They are a mixture of x86_64 and Arm64 architectures.
- All automated with Nix/NixOS and using systemd, a hosted secrets manager, and Gitlab CI.

- Private networking using Tailscale + Wireguard