

# JOE HILLENBRAND

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I have 13+ years of experience working at all levels of the software stack, including front-end, back-end, microservices, testing, database, cloud, infrastructure as code (IaC), and continuous delivery (CI/CD). I'm passionate about building reliable, type-safe, fault-tolerant, distributed systems without over-engineering. I have a lot of expertise in DevOps as a discipline, but I am primarily a software engineer.

My current favorite tools are Rust, Typescript, Deno, React, GraphQL, Pulumi, Kubernetes, GitLab CI, Linux, and Git.

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## **Lead DevOps Engineer @ Siemens**

*Apr 2022 - Present*

- Introduced a new continuous delivery process using GitLab CI.
- Infrastructure management for AWS using CDK and Pulumi in Typescript.
- Angular front-end development
- Back-end development in Typescript leveraging AWS Lambda, DynamoDB, AppSync/GraphQL, CloudFront, SQS.

## **Software Engineer @ Seaplane IO**

*Nov 2021 - Feb 2022*

- Rust development.
- Infrastructure management for AWS and GCP using Ansible, Python, and Pulumi.
- CI/CD on GitHub.
- Design documentation for authentication system using Auth0.

## **Senior Consultant @ Slalom Consulting**

*Oct 2019 - Nov 2021*

### **Solution Architect @ Adaptive Biotech**

*July 2021 - Nov 2021*

- Implemented the MVP phase of my previous DevOps proposal.
- Created GitLab infrastructure.
- Built the CI/CD pipeline and DevOps automation on GitLabCI.

### **Lead DevOps/Cloud Architect @ Pokemon**

*Jan 2021 - July 2021*

- Deployed pokemoncenter.com to an additional AWS region with AWS CDK in Typescript.
- Improved and expanded existing CodeBuild/CodePipeline CI/CD.
- Created a proposal for a major overhaul of the DevOps processes and migrate CI/CD to GitLab.
- Began an initiative to migrate from AWS Lambda to Kubernetes.

### **Solution Architect @ Adaptive Biotech**

*Nov 2020 - Jan 2021*

- Conducted a DevOps Maturity Assessment in a heavily regulated life-sciences and in-vitro diagnostics software development practice.
- Conducted interviews and surveys to evaluate the existing SDLC.
- Proposed a strategy to transform from Waterfall SDLC methodology to a Lean, Agile, DevOps process while maintaining healthcare regulatory compliance.

### **Cloud Architect @ SEIU Benefits Group**

*June 2020 - Nov 2020*

- Redesigned and rebuild the AWS architecture with Pulumi and the Serverless framework.
- Full-stack development for a bespoke in-house e-learning platform.
- Converted the entire large existing React project from Javascript to Typescript along with a major refactor.
- Mentored junior engineers.

**Lead DevOps/Cloud Architect @ Pokemon***Oct 2019 - June 2020*

- Built and maintained AWS services for a brand new eCommerce platform, [pokemoncenter.com](https://pokemoncenter.com).
- Managed AWS Infrastructure with AWS CDK (CloudFront, Lambda@Edge, WAF, SES).
- Backend development using Node.JS running on AWS Lambda.
- Front-end web development with Typescript, React, Redux, and Next.js.
- Manage CI/CD infrastructure using Docker, BitBucket Pipelines, CodeBuild, CodePipeline, and CloudFormation.

**Senior Engineer @ Purposeful***Dec 2018 - Oct 2019*

Sunlight Payments pivoted and rebranded to become Purposeful.

- Full-Stack Web Development in TypeScript using React, styled-components, Next.js, Express, GraphQL, PostGraphile, PostgreSQL, and IaC with AWS CDK.
- Built end-to-end type-safety, from UI to database, with GraphQL, Postgraphile, and graphql-code-generator.
- Designed and built user authentication and account management via Auth0.
- Added product search via Algolia.
- Introduced database-level business logic and testing in SQL Stored Procedures.
- Wrote a Chrome/Puppeteer-based crawler for CI.

**Senior Engineer @ Sunlight Payments***Dec 2017 - Sept 2018*

- Rebuilt the CI/CD pipeline with AWS CodePipeline and Elastic Container Service (ECS) across isolated AWS accounts. All changes merged to master were automatically tested and deployed to production without user interaction in under 30 minutes.
- Replaced the NixOS-based developer environment with Docker.

**Infrastructure Developer @ Elastic***Sept 2014 - Nov 2017*

The role of the infrastructure team at Elastic provides developers with infrastructure solutions and tested the company's products by using them.

- Primary software developer for the Infrastructure Team.
- Developed a configuration management library in Haskell, named Craft, as a more versatile and type-safe alternative to Puppet and Ansible.
- Built, with Haskell/Craft, a large-scale automated test suite to deploy and test Elasticsearch in 100 to 1000 node cluster configurations on AWS and GCP.
- Developed, using Haskell/Craft and `oauth2_proxy`, a highly available proxy service to allow employees to give Google SSO access to their internal Elasticsearch clusters without installing anything, having any special access, knowing any secrets or asking the infrastructure team for help. It has a management portal and would automatically create custom domain names and TLS certificates.
- Deployed the Vault secrets management service in a highly available configuration.
- Wrote a custom wildcard DNS service (`ip.es.io`) in Haskell as a highly available alternative to `xip.io` or `nip.io`. The existing solutions were not reliable enough.
- Built AWS Lambda functions to monitor the company's internal AWS usage and billable activity.
- Various other development in Python, Bash, Clojure, and Go.

**Backend Software Engineer @ Flowroute***Dec 2013 - Sept 2014*

- Built an asynchronous JSON-RPC client in C to be embedded in the synchronous SIP server Kamailio.
- Built microservices using Twisted Python.
- Designed and implemented a distributed, high-throughput, reliable call detail record (CDR) database system with idempotent, real-time account balance tracking using NSQ, Couchbase, Riak, and Twisted Python.
- Implemented the SMPP binary protocol (SMS/MMS) in Python.
- Django development for the website.
- Successfully advocated development best practices to the team, such as linting and code review.
- Built a prototype for a new SIP protocol and server in Haskell from scratch.

**DevOps Engineer @ Wetpaint***Jan 2011 - Dec 2013*

- DevOps infrastructure management with Puppet.
- Transition everything from SVN to Git.
- Centralized all server logging using `syslog-ng`.
- Frontend web development in HTML/ERB, CSS, JS/jQuery
- Designed and built a high-performance, distributed web analytics prototype using Couchbase and a modified Nginx server in C.

**Systems Administrator** @ General Electric

*Mar 2009 - Nov 2010*

- Deployed and managed physical FreeBSD servers using Puppet.
- Replaced CVS with Git.
- Automated deployments using Python and Bash.

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**Bachelor of Science in Electrical Engineering**

*Embedded Computing Systems*

University of Washington

Dec 2008

*Updated: 2023-04-05*