

Peter Hua

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Experience

Software Developer, Creator,

Jan 2023 – present | Remote

Tinker — <https://tinker-base.github.io> 📄

Created an open-source, self-hosted, backend-as-a-service (BaaS) that automates deployment on AWS.

- Published CLI that deploys 26 AWS components with CloudFormation to reduce manual steps from ~180 to 9
 - Led infrastructure and network design for backend access through firewall rules (Network ACL, Security Group)
 - Engineered automatic provisioning on EC2s of web server, database, and an API layer that eliminates boilerplate routes using Docker/Compose
 - Centralized certificate management by TLS offloading (ALB), reducing count from linear growth to constant
 - Automated TLS certificate requests (Certificate Manager) and DNS record creation (Route 53)
 - Secured PostgreSQL databases through JWT authentication and role authorization
 - Developed dashboard for PostgreSQL databases to replace manually writing SQL queries (React/Tailwind)
 - Created stored procedures enabling the dashboard to call RPCs that execute DDL and DML SQL queries
 - Configured ALB to route requests from dashboard and requests to API layer, and NGINX server blocks to serve dashboard assets
 - Authored technical case study on problem domain, architecture, challenges, and design decisions
- <https://tinker-base.github.io/case-study> 📄

Software Engineer, Birket Engineering

Jun 2017 – Dec 2021 | US, Japan, China

- Built the orchestration and synchronization services that coordinates audio/video, lighting, show action, animated figures, and special effects, with live performers using Ethernet/IP, UDP
- Designed RPC based interfaces for integration with external vendors
- Transformed logging/alarm data from disparate sources into Microsoft SQL Server for visualization and custom querying by client engineers
- Designed wireframes in collaboration with client users and developed user interfaces for operation/monitoring
- Defended designs to Engineering Safety and government auditors for approval to open to public guests
- Investigated and resolved L1-L3 network issues using Wireshark
- Trained 100+ technical staff on operation, troubleshooting, and maintenance
- Authored design documentation, operation manuals, and procedures for client engineering staff

Skills

Languages & Frameworks (JavaScript, Node.js/Express, Ruby, Go, Sinatra, React, SQL)

Tools (PostgreSQL, Docker, NGINX, Wireshark, Linux, Git)

Cloud (AWS (CloudFormation, EC2, ALB, S3, VPC, IAM), DigitalOcean (Droplets), Heroku)

Education

BASc Electrical Engineering with Distinction, University of British Columbia

Electrical/Computer engineering coursework

Professional Engineer (P.Eng), Association of Professional Engineers and Geoscientists of Alberta