

Sai Krishna Dubagunta

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PROFESSIONAL SUMMARY

Full-stack software engineer and principal consultant architect with 9+ years of experience designing and delivering scalable, high-performance systems across cloud, microservices, and AI-integrated platforms. Proven across the full stack in Golang, Rust, Zig, TypeScript, and Ruby, with deep expertise in API design, system optimization, and engineering leadership.

PROFESSIONAL EXPERIENCE

HTC Global Services - Principal Consultant Architect

Dec 2024 - Present · Indiana University

- **Savi:** Architected the community information tool, improving response time by 93% (3s -> 200ms).
- **Server Optimization:** Built a Golang API Gateway with service discovery, load balancing, and Redis caching, cutting response times from 200ms to 5ms with zero-downtime autoscaling.
- **SAAS Element:** Built a declarative microfrontend hosting solution for multi-instance client configuration, reducing compute overhead.
- **Team Leadership:** Led a distributed offshore team of 20 engineers across time zones, coordinating delivery and maintaining engineering standards.
- **Solutions & POCs:** Provided architectural solutions and built POCs, validating performance claims with benchmarks and actionable insights.

HTC Global Services - Software Engineer L4

Apr 2024 - Dec 2024 · Alliance Partner

- **Premium Fund Accounts:** Modernized an internal insurance agent tool, resolving critical bugs and improving performance by 90%.
- **Management of Financial Institutions:** Designed the application architecture for managing a registry of financial institutions.

Haven Technologies - Software Engineer II

Sep 2022 - Aug 2023

- **Application Aggregator:** Built a centralized authentication and application listing system with RBAC, improving access management and user experience.
- **Angular Upgrade & Design System:** Upgraded Angular v9 -> v14 and transitioned to a custom component-based design system, enhancing UI consistency and performance.

Vydia, Inc. - Product Engineer

May 2018 - Aug 2022

- **Artist Tiers:** Engineered a revenue-based tiering system that optimized customer service prioritization, accelerating response times for high-value clients.
- **Distribution Chain:** Designed a high-scale ingestion and XML generation pipeline, cutting developer effort by 98% and slashing distribution time-to-market.
- **Smartlinks:** Built dynamic social media landing pages, increasing artist engagement by 40% and boosting streaming conversions across platforms.

- **Profile for Artists:** Proposed and architected a scalable artist profile system that became a core feature post-acquisition, enhancing user personalization.

TECHNICAL SKILLS

- **Languages:** Golang, Zig, Rust, Ruby, Python, JavaScript/TypeScript, Java
- **Frontend:** Vue, React, Angular, Next.js, Redux, TailwindCSS, Webpack, RSbuild, Micro-frontends
- **Backend:** Node.js, Express.js, Ruby on Rails, Django, Spring Boot, GraphQL, gRPC
- **Data:** PostgreSQL, Apache AGE (graph), Redis, RabbitMQ, MongoDB, GORM, TypeORM
- **DevOps:** Docker, Kubernetes, Terraform, AWS, GCP, GitHub Actions, GitLab CI/CD
- **Practices:** TDD, API Design, Microservices, Web Performance Optimization, Caching Strategies, Agile/Scrum

EDUCATION

- **M.S. Computer Science:** - New Jersey Institute of Technology, Newark, NJ
- **B.Tech. Computer Science:** - Andhra University, Visakhapatnam, India

PROJECTS

Katha - AI-native Reading Platform

Purposes Ecosystem

- Polyglot persistence: PostgreSQL, Apache AGE graph DB with hand-rolled Cypher and bitemporal edge semantics, and a file-blob store for large content.
- Two-stage AI pipeline (motif/narrative extraction -> summarization) via gRPC to Go microservices running a local llama.cpp LLM.
- Compositional React reader with hierarchical ToC, multi-input navigation, content-tier toggling, and graph-stored annotations.

Katha - Document Parser CLI

Rust · GitHub repository

- Cargo workspace CLI normalizing EPUB/DOCX/PDF into a unified document model (headings, lists, tables, figures).
- CI/CD via GitHub Actions: cross-compiles release binaries for Linux/macOS/Windows and cuts GitHub releases gated on tests passing.

katha-parsers - Document Parsing Library

Rust · Library crate link

- Standalone Rust crate published to crates.io providing a unified Parser trait for EPUB, DOCX, and PDF formats.
- Shared HTML-cleaning pipeline converting raw format markup into semantic content blocks (headings, lists, tables, figures).
- Custom pdf_oxide integration for PDF table and embedded image extraction as base64 data URIs, beyond plain-text parsing.

PlumCache - Key-Value Database

PlumCache Documentation

- Built in Zig for low-level memory control with a namespace-supported, trie-based finite state machine.
- Plugin architecture enabling features as independently loaded modules.

Zserve - Event Loop Static File Server

Zserve GitHub repository

- Event-loop-based static file server built in Zig for high-throughput performance and minimal memory footprint.

ACHIEVEMENTS & PUBLICATIONS

- Exhibited landscape photography at Bridgeport Art Center, Chicago; featured Fujifilm photographer on Instagram.
- Contributed to a project that received national media coverage on Cheddar News.
- Writes on software engineering, career development, and technology via Personal Blog, Substack, and Medium.