

Agamy Samuel

Portfolio: agamy.dev

GitHub: github.com/agamy-samuel

Email: work@agamy.dev

Mobile: +91-8874116597

LinkedIn: linkedin.com/in/agamyasamuel

EXPERIENCE

- Vowell, Software Technology Park of India (STPI)** Prayagraj, UP
Founding Engineer Jan 2025 – Present
 - For **Kognitapp**, We Architected and deployed an **end-to-end** live virtual classroom platform supporting up to **50 concurrent students** per session using **LiveKit WebRTC SFU**, enabling real-time video/audio communication with scalable media distribution and reducing the connection overhead of **full-mesh WebRTC** by **90%**.
 - Built an automated video transcoding and delivery pipeline using **FFmpeg** and **HLS**, reducing recording processing and publishing turnaround by an estimated **40–60%** and enabling reliable playback of lectures with **adaptive streaming**.
 - For **Algolini**, We Accelerated **time-series data** ingestion by **3.5x** by implementing **TimescaleDB hypertables**, enabling high-throughput storage and efficient querying of **large-scale OHLC** market data.
 - Built **time-weighted OHLC analytics** and **candlestick visualization**, reducing historical aggregation **p99 latency** by an estimated **40–50%** through optimized time-series queries and pre-aggregated calculations
 - Engineered a deterministic strategy engine to translate and execute TradingView Pine Script strategies in Python, reducing strategy porting effort by an **estimated 80–85%** while enabling **reproducible backtesting**.
 - For **OKI, IIIT Hyderabad** Built an **OCR + LLM pipeline** extracting 52 fields per book at **94% accuracy**, processing 10+ books/day on CPU-only inference, by **orchestrating Tesseract 5, Qwen 7B**, using **Celery queue**.
 - Reduced per-book processing time by **60%**, from **45 to 18 minutes**, by implementing **8-way parallel Celery workers**, SQLAlchemy row-level locking, **Redis SSE streaming**, and autoretry, while maintaining reliable processing.
 - Extracted 1,200+ Wikidata-mapped metadata fields with **91% field-level confidence** and **cut manual review time by 70%** through per-field evidence tracking, while delivering **sub-200ms search across 10,000+ records**.
 - For **English Learners Education Private Limited** Architected and deployed production-grade, **across 7 AWS regions**, ready cloud infrastructure for a **25,000-member community**, supporting **500 DAU** and **7,500 MAU** through automated CI/CD, containerized services, observability, and scalable capacity planning.
 - Designed and implemented **real-time voice chat supporting 50–100 participants** per virtual room using **LiveKit SFU, WebRTC, and WebSockets**, enabling scalable low-latency communication while avoiding the connection overhead of **full-mesh peer-to-peer architecture**.
 - For **Dealbana** Built and deployed an e-commerce platform integrating BigShip's multi-carrier logistics aggregation APIs, **enabling access to 30+ logistics partners across India** and automating shipment creation, tracking, and delivery.
 - Architected and **open-sourced** a reusable **BigShip SDKs, Bigship AI Agent**, in collaboration with BigShip, then integrated it across multiple Dealbana internal platforms, reducing duplicate logistics integration **code by 40–60%** and integration **effort by 50–70%** while standardizing access to shipping and tracking capabilities.
- MNNIT Allahabad** Prayagraj, UP
Cryptography & Network Security Researcher, under Prof. Rama Shankar Yadav Nov 2024 – Dec 2024 (2 month)
 - Improved AES key-recovery signal efficiency by **25% over baseline** by optimizing side-channel attack methodology combining **timing analysis and CPU probing**, enabling more precise cryptanalytic results.
 - Contributed to publishable cryptographic security research by analysing implementation-level vulnerabilities in hardened encryption deployments and authoring concrete mitigation strategies.
- Impulsive Web** Greater Noida, UP
Software Development Engineer Intern July 2024 – Oct 2024 (4 month)
 - Reduced HRMS backend response time to **~300ms p99** in production under real user traffic by engineering optimised query pipelines and refactoring high-latency backend workflows.
 - Accelerated feature delivery and improved long-term maintainability by collaborating cross-functionally with frontend engineers to redesign **Angular state management** and enforce modular architecture patterns.

PROJECTS

- Bigship Typescript SDK, Bigship Python SDK** [npm](#) — [Typescript SDK](#) — [Python SDK](#) — [AI Agent](#)
Reduced third-party integration time to near-zero by designing and publishing a **production-ready, fully type-safe TypeScript SDK** for the Bigship Outbound API, abstracting shipping logistics, order management, rate calculation, and real-time tracking behind an ergonomic developer interface. Stack: TypeScript, Node.js, NPM.
- Indic Book Metadata Extractor** [GitHub](#)
Extracted **52 bibliographic metadata fields** from scanned Indic-language book PDFs (Telugu, Hindi, English) by building a full-stack **OCR-to-structured-metadata pipeline** with multi-stage extraction combining rule-based regex, NER, dictionary fuzzy matching, and LLM reasoning with per-field confidence scoring. Stack: Docker, FastAPI, Celery, PostgreSQL (pgvector), Redis, Next.js, PyMuPDF, OpenCV, Tesseract, PaddleOCR, Ollama (Qwen2.5 7B), Instructor, Wikibase.
- Intelligent Domain Knowledge Platform (IDKP)** [Report](#) — [GitHub](#)
Delivered **source-cited, hallucination-resistant** responses at inference time by building a production-grade AI Q&A platform fusing domain-specific **QLoRA fine-tuning** (Unsloth/PEFT) with an advanced RAG pipeline featuring HyDE, BM25, cross-encoder reranking, and RRF fusion. Stack: FastAPI, PostgreSQL, Redis, Qdrant, LlamaIndex, LangChain, vLLM, OpenTelemetry.

- SHUATS National Talent Search Examination Platform**
Live URL
 Improved administrative efficiency by **63%** over the prior system by building a centralised, high-availability examination platform with real-time **anti-cheat enforcement**, UFM detection, and $\text{\LaTeX}$ -rendered mathematical equation support. Stack: Docker, Next.js, TypeScript, PostgreSQL, WebSocket, $\text{\LaTeX}$.
- Community Management Application (Open Source)**
Wiki — GitLab
 Enabled global-scale community event organisation with **multi-level hierarchical RBAC** by developing a Wikimedia Community Management System deployed on **Kubernetes GKE (Toolforge)** for production reliability. Stack: Docker, Kubernetes, Next.js, Tailwind, MySQL, Drizzle ORM, ShadcnUI.
- Plannova**
Live URL — GitHub
 Unified venue, vendor, and service-provider discovery into a single platform with **granular four-tier RBAC** (Customers, Vendors, Staff, Admins) by engineering a full-stack booking system with Razorpay payment integration and Google Analytics instrumentation. Stack: Docker, Google Cloud, Redis, React.js, TypeScript, NoSQL, Zod.
- Event Management & Tracking System**
Live URL — GitHub
 Eliminated manual attendee tracking overhead end-to-end by implementing a **QR-based ticketing system** with automated email notifications and real-time tracking, deployed on AWS with Kubernetes-orchestrated microservices. Stack: Docker, Kubernetes, Next.js, Tailwind, MariaDB, Drizzle ORM, Resend.

TECHNICAL SKILLS

- Languages:** C/C++, Go, Java, Python, JavaScript (ES6+), TypeScript, HTML, CSS, Tailwind, Bash
- Frameworks:** React.js, Next.js, Angular, Node.js, Express.js, Django, Flask, GraphQL, REST APIs, WebSocket
- Database & ORM:** PostgreSQL, MySQL, MariaDB, Oracle DB, Redis, NoSQL, Qdrant (Vector DB), Prisma, Drizzle
- AI / ML:** RAG, QLoRA Fine-tuning, LangChain, LlamaIndex, vLLM, BM25, Cross-Encoder Reranking, HyDE
- Cloud & DevOps:** Docker, Kubernetes, Terraform, AWS, Google Cloud, Oracle Cloud, CI/CD, Jenkins, Pub/Sub, GKE
- Tools:** Git, OpenRefine, OpenTelemetry, Linux/Ubuntu, Toolforge

EDUCATION

- Sam Higginbottom University of Agriculture, Technology and Sciences (SHUATS)**
Prayagraj, UP
Bachelor of Technology, Computer Science & Engineering; CGPA: 7.8
2022 – 2026

CERTIFICATIONS

- Professional Cloud Architect (PCA)**
Google Cloud
 Credential issued by Google Cloud.
 View Certificate

OLYMPIADS & COMPETITIONS

- Kaggle Community Olympiad – Unmasking Fakes**
View Leaderboard
 Secured **Rank 5** (Regional).
- ML Olympiad – Predicting Wellness**
View Leaderboard
 Top-ranked competitive ML challenge participant.

HONORS & ACHIEVEMENTS

- Indic Wikimedia Hackathon, Hyderabad 2026**
Jun '26
 Mentor & Speaker; mentored students across diverse technical tracks.
- Wikimedia Hackathon 2026, Milan, Italy**
May '26
 Invited to present project at the global Wikimedia Hackathon with a **fully funded scholarship**.
- Indic Wikimedia Hackathon, Kochi 2025**
Jul '25
 Mentor & Speaker; mentored **50+ students** across diverse technical tracks in a 3-day national hackathon.
 Full Report
- HackByte 3.0, IIIT Jabalpur**
Apr '25
 Judge & Mentor for **2,500+ participants** in a 36-hour national-level hackathon.
 Full Report
- Road to Wiki Graduation, Meta (Facebook) Office, Gurgaon**
Feb '25
 Speaker & Mentor; team achieved **highest impact** with 14+ approved open-source contributions.
 Full Report
- Indic Wikimedia Hackathon, Bhubaneswar 2024**
Dec '24
 Selected among **top 30 out of 500+** applicants.
 Full Report
- 3rd Wiki Tech Summit, IIIT Hyderabad**
Oct '24
 Invited attendee at the 3-day Wikimedia Technology Summit.
 Full Report

VOLUNTEER WORK

- Wikimedia Foundation**
Remote
Project Maintainer – Community Management Platform
July 2024 – Present
- Building and maintaining an open-source platform for hosting and organising in-person and virtual community events, adopted across the global Wikimedia ecosystem.