

Shishir Pai

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EDUCATION

University of Massachusetts Amherst

Bachelor of Science in Computer Science; GPA: 3.83

Amherst, MA

Dec 2025

EXPERIENCE

Founding Engineer

ZenGate Global

May 2023 – Present

Osaka | Remote

- Built blockchain-based commodity traceability platform, securing over **1M** USD in funding
- Developed **smart contracts**, **TypeScript** libraries, and high-throughput bots handling **100s** of tx/day
- Built decentralized token yield platform, totaling over **1.5M** USD in Total Value Locked
- Designed a **Merkle-trie oracle** scaling on-chain data feeds from hundreds of data points to over **100 billion** via a fixed-size on-chain root with off-chain proof serving (**Go**, actor model, Postgres, IPFS)
- Designed the **offline-first sync architecture** for field clients on poor connectivity

Co-Founder & Lead Developer

Phoenix Finance

July 2023 – Present

Remote

- Designed, tested, and deployed smart contract enabling secure fund storage, peaking **\$375,000** TVL
- Fixed** critical security vulnerability exploited by a whitehat who drained **\$90,000**; added 50+ full-coverage tests

System Architect & Smart Contract Engineer

Capsule

June 2022 – Feb 2023

Boston, MA

- Designed the publication framework that cut on-chain transaction costs by **10x**; drove contract scalability testing for **10,000+** concurrent users

PROJECTS

Supership | *Python, LLM Harness*

Jul 2026

- agent workflow harness running a clarify → plan → build → review → consolidate pipeline as **inspectable Python control flow** (agent/parallel/completion primitives) instead of nested-agent prompting
- Review engine with a per-lens reviewer fanout with model rotation, LLM judge triage, a fail-open **refute-verifier** requiring cited evidence for a finding to survive, then gated parallel auto-fix
- Dual-model **adversarial planning**, resumable runs from a single code-written state file, and provider **load balancing**

Trophos CV | *TypeScript, React, MediaPipe, Convex, Cloudflare*

Jul 2026

- Browser-native computer-vision and LLM assisted lifting-form analyzer, full auth/analytics stack
- built end-to-end using supership (this was a test project)

ashmaize-eval | *Go*

Jul 2026

- Coding-agent **eval harness** where an agent implements an undocumented proof-of-work VM from spec alone in an offline container, graded by exact output match against a **reference oracle** across **100** scenarios, with a cross-model scorecard

Nocturne Mining Network | *Rust, TypeScript, Hono, Cloudflare Workers, Drizzle ORM*

Nov 2025

- Architected a serverless **TypeScript** backend processing **331 million** requests in 11 days; utilized **Cloudflare Hyperdrive** and **Drizzle ORM** to manage connection pooling for high-concurrency PostgreSQL writes
- Engineered a multi-threaded **Rust** mining client downloaded **50,000+** times, achieving a peak network hashrate of **328 MH/s**, equivalent to the compute power of **~36,000** M4 Macs
- Scaled infrastructure to verify **25M** cryptographic solutions from **14,000+** active machines with zero downtime, implementing a custom JWT authentication flow and Redis-like KV caching strategies

ErgPy | *Python*

April 2022

- Python library for building Ergo transactions; used by a developer community of 300+

ACHIEVEMENTS

Hackathons

Nov 2022 — Mar 2024

- Won **Ergo Hackathon**: smart contracts for a blockchain DNS enabling human-readable payments
- Won **Alephium Hackathon**: on-chain game with thorough end-to-end tests

Northwestern Trading Competition

Oct 2024

- Placed **3rd** for highest P&L in a simulated HFT environment

Eagle Scout

Nov 2021

- Led project creating a school sensory room for special-needs children; earned **50+** merit badges

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Scala, Python, Java, C, C++, Rust, R, Go, SQL

Smart Contract: Solidity, ErgoScript, Aiken, Ralph

Frameworks: React, Hono, Next.js, NestJS, MedusaJS, GraphQL, JWT, Jest, Vite, Flask, FastAPI, Play (JVM), Spring Boot, Akka **Tools:** Linux, Windows, VPS, Docker, Git, GitHub CI/CD, SBT, Gradle, Maven, PyPI, npm, Kanban, Firebase, Supabase