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Summary

Second-year Computer Science (AI) student at VIT Pune (GPA 8.9/10) with 11 merged pull requests into OpenTelemetry (CNCF graduated) and pandas, and 10 more under review. Builds backend services and Bitcoin protocol tools in Go and Python. Seeking a Backend / AI Software Engineer Internship focused on distributed systems, developer tooling, and observability.

Technical Skills

Languages: Go, Python, Java, C++, SQL, Shell Scripting

Frameworks & Libraries: OpenTelemetry SDK, gRPC, REST APIs, Spring Boot (Beginner), Pandas, NumPy

Tools & Platforms: Git, GitHub, GitHub Actions (CI/CD), Docker, Kubernetes, Linux, Bash, Cloud (OCI/AWS Basic)

Concepts: Data Structures & Algorithms, OOP, Distributed Systems, Observability, Concurrency, Unit Testing, API Design, Bitcoin Protocol, NLP, ML Algorithms, AI concepts

Experience

Open Source Contributor — Kubernetes SIGs, OpenTelemetry (CNCF), pandas, SeedSigner *Go, Python*

- Found and fixed a quadratic scan in `kubernetes-sigs/resource-state-metrics` metric generation — a single pass over the resolved map dropped it 99% and took allocations from 421 to 2 (#102) — and cached Starlark compilation behind `sync.Once` so scripts compile once per resolver rather than once per object, for a further 67% (#101). Both in review.
- The `net/http` hooks in `otelc` run on every request, so swapping their map-based state for a typed struct and gating debug logging behind a level check cut hook latency 19% and allocations from 27 to 21 per request (#1137). A second skips the tool-file rewrite and `go mod tidy` when nothing changed, saving ~16s per steady-state build (#1136). Both in review.
- In `opentelemetry-go`, replaced the two-pass `traceparent` decode with a generated reverse hex table that decodes and validates in one pass, taking 9–11% off `Extract` (#8739), and unrolled the trace and span ID hex decoders so the compiler can drop all 12 bounds checks, worth 33% and 28% at zero allocations (#8740). Both in review.
- Merged earlier: `Enabled()` guards across the OTLP-gRPC, OTLP-HTTP, and Prometheus exporters, skipping attribute work when telemetry is off (#7824, #7825, #7881, #7866); a 72-file `semconv` v1.37.0 to v1.39.0 migration (#7789); histogram buckets generated from `weaver.yaml` (#8015); tests for `Key.Emit()` and `Resource` merge (#7751, #7764); a spec overview update (#5112); and a Collector build fix (contrib #46467).
- Outside Go: merged a `check_array_indexer` documentation fix into pandas (#62573). Open in SeedSigner: custom BIP-32 derivation paths and Taproot (P2TR) multisig verification for the Address Explorer (#916, #927).

Projects

SherLock — Bitcoin Chain-Analysis Toolkit *Go, REST API*

- Parses raw Bitcoin Core block, undo, and XOR files, then applies heuristics (common-input-ownership, change detection, consolidation, CoinJoin) to produce JSON and Markdown intelligence reports via a CLI and web API.

Coin-Smith — BIP-174 PSBT Transaction Builder *Go, REST API*

- Builds spec-compliant PSBTs with greedy coin selection, vbyte-based fee-target enforcement, dust-aware change creation, and RBF/locktime handling; exposes a CLI and `POST /api/build` REST endpoint.

Chain-Lens — Bitcoin Block Analyzer *Go, REST API*

- Computes transaction-level statistics (txid/wtxid, fee, vbytes, script classification) from raw block and undo files with XOR-key decoding; serves structured JSON through a REST API and web UI.

YouTube Shorts Pipeline — Content Automation *Python, GitHub Actions*

- Generates scripts via the Gemini API, sources footage via the Pexels API, and publishes through the YouTube Data API v3 (OAuth 2.0); runs on a GitHub Actions cron with credentials in GitHub Secrets.

Certifications

- Oracle:** OCI Foundations Associate; OCI Generative AI Professional — RAG, vector embeddings, model deployment. (2025)
- Anthropic:** AI Fluency — Framework & Foundations; Claude 101.
- Amazon Web Services (AWS):** AI Practitioner Challenge — Udacity. (2026)
- Infosys Springboard:** Introduction to Artificial Intelligence; Introduction to Deep Learning; Introduction to Natural Language Processing. (2026)

Education

VIT Pune — B.Tech in Computer Science (AI) *2025 – Present*

- Second Year — Current GPA: 8.9 / 10

AECS 3, Tarapur — CBSE Class XII (87%) *2025*

Achievements & Awards

- Linux Foundation LiFT Scholarship 2026 (Shubhra Kar):** Awarded a course and certification-exam scholarship by the Linux Foundation.
- Summer of Bitcoin 2025 — Proposal Round:** Cleared 4 eliminatory rounds (screening, protocol bootcamp, open-source phase, proposal) from thousands of applicants.
- LFX Mentee Finalist (Linux Foundation):** Selected for a maintainer technical interview from a global applicant pool.
- Google Big Code 26:** Ranked top 15,000 nationally by clearing the Qualifying Round.

Competitive Programming

- 350+ DSA problems solved on LeetCode; CodeChef 3-Star (max 1741); Codeforces Pupil (max 1295).