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SUMMARY

Software engineer who builds with AI agents every day, not just with AI APIs. B.Tech CSE at PES University (2028). Ships end-to-end systems: a supply-chain trust gate that CI/CD pipelines and AI coding assistants query before installing a dependency (capstone), a full-stack LLM-assisted vulnerability scanner (React + Flask), and an agentic study pipeline that turns course material into knowledge graphs and generates exam-grade practice papers. Runs a multi-agent development setup (Claude Code + Codex sharing skills, rules and persistent memory, with planner / executor / reviewer roles), so prompt design, context management and verifying agent output are daily practice. Learns fast by building: picked up Rust and WebAssembly internals outside coursework to build a live process-migration VM.

TECHNICAL SKILLS

Languages: Python, Java, C, C++, JavaScript, SQL, Rust, HTML/CSS
Agentic AI & GenAI: AI coding agents (Claude Code, Codex), multi-agent orchestration (planner / executor / reviewer), prompt engineering, context management, RAG, knowledge graphs, LLM APIs (Groq LLaMA 3.3), custom agent skills, hooks & MCP tools
Software engineering: OOP, data structures & algorithms, SDLC & Agile/Scrum, REST APIs, Git & GitHub, CI/CD (GitHub Actions), Docker, Linux, testing & code review
Web, data & ML: React, Flask, PostgreSQL, MongoDB, XGBoost, PyTorch, SHAP
Currently learning: Go, AWS, Kubernetes (cloud-native)

PROJECTS

Supply-Chain Trust Gate — Capstone (team of 4) | *Python, PyPI, GitHub Advisory DB, RAG* Aug 2026 – Present

- Building a gate that CI/CD pipelines and AI coding assistants query before installing a dependency: it checks a registry's security claim (e.g., "vulnerability fixed in version X") against the artifacts actually shipped and returns TRUST / VERIFY / FLAG / ABSTAIN with cited evidence, before install.
- Own the PyPI adapter: fingerprint an advisory's fix commit, download every PyPI release of the package, and identify the first release that truly contains the fix — adjudicating between GitHub Advisory Database and PyPA records and preparing upstream corrections.
- Completed a pre-registered go/no-go study (Stage 0) that found 820 real cases where GitHub and PyPA disagree on a fixed version (pass mark: 300), 711 with a traceable fix commit; daily advisory-database mirroring scheduled on GitHub Actions.

Repo6uard — AI-Assisted Source-Code Vulnerability Scanner | *Python, Flask, React 19, Groq LLaMA 3.3, OSV* 2026

- Built as part of a 6-person team in the CIE Ignite Phase 2 startup programme: a full-stack web app that combines static analysis with a GenAI reasoning layer to catch vulnerabilities in Python and JavaScript source before deployment.
- Implemented the Flask backend's multi-pass pipeline — Bandit (Python) and njsscan (JavaScript) static analysis, a Groq llama-3.3-70b-versatile pass that cuts false positives and generates remediation suggestions, and a live OSV.dev dependency check mapping CVSS scores to severity tiers; findings normalized to OWASP Top-10.

Agentic Study Pipeline — Course Material to Knowledge Graphs | *Python, LLM agents, knowledge graphs* 2026 – Present

- Automated syncing of five semester courses' slides, notes and question banks from the university portal; found and fixed a silent bug where only 21 of 62 classes' files were downloading (unhandled file-serving path and non-PDF formats).
- Built per-subject knowledge graphs (Graph Theory: 409 concept nodes, 543 edges; theorems, worked problems and past exam questions as typed nodes), each annotated with its common exam trap, which an AI agent uses to generate exam-pattern practice papers and run interactive quiz drills.
- Wrote a slide-diff tool to check third-party study material against the official decks (0.95–1.00 similarity), so the agent works only from verified sources.

Multi-Agent Development Environment | *Claude Code, Codex, MCP* 2026

- Designed a setup where two independent coding agents (Claude Code and Codex) share one set of skills, project rules and read/write persistent memory, with no second copy to maintain; wrote the design spec covering parity, permissions and sandboxing trade-offs.
- Run a planner / executor / reviewer delegation workflow: a lead agent analyses the task and writes bounded instructions, sub-agents implement only the changes I approve, and the lead verifies their output before anything is reported done.

Parakaya — Live Process-Migration Virtual Machine | *Rust, distributed systems, GitHub Actions* 2026 – Present

- Designing and building a snapshot-native WebAssembly interpreter in Rust (#![forbid(unsafe_code)], zero runtime dependencies) whose entire execution state — value stack, call frames, program counter, linear memory, globals, and tables — is plain serializable data, checkpointable at any instruction boundary.

- Architected cross-device live migration of a running program across heterogeneous hardware (x86-64 PC, aarch64 Raspberry Pi, Android phone, cloud VM) via a two-phase, WAL-backed, epoch-fenced network handoff protocol: the program never runs on two devices at once and is never lost, even across power loss at any step.
- Automated quality gates with a GitHub Actions CI pipeline (rustfmt check, clippy -D warnings, test suite on every push and pull request); verification plan covers the W3C WASM spec suite, differential fuzzing against wasmtime, and 1,000+ randomized power-loss injections.

PassGen Vault — Zero-Knowledge Password Manager | *JavaScript, Flutter/Kotlin, Web Crypto* 2026

- Shipped a web app and a native Android app sharing one AES-256-GCM-encrypted vault synced through OneDrive; all cryptography runs client-side (PBKDF2-SHA256, 600,000 iterations; Android Keystore biometric unlock), so the cloud only ever stores ciphertext.

Additional Projects | *Python, C, Verilog, PyTorch* 2024 – 2026

Meditech Lab 2.5 — hospital-lab informatics dashboard (~3,300 lines of Python/Flask over PostgreSQL) with an HL7 v2.5 message builder written from scratch.

Clinical Timeline Builder — Python tooling that validates and idempotently upserts FHIR R4 resources to a live HAPI FHIR server over REST APIs and rebuilds a chronological patient timeline.

Heart-Disease Predictor — staged 3-tier XGBoost screening model (90.4% accuracy / 0.938 AUC) with per-patient SHAP explanations; built at the Epoch Datathon.

SDN Traffic Classifier — custom POX OpenFlow controller on Mininet classifying TCP/UDP/ICMP flows; first-packet latency ~93–98 ms dropping to ~0.04 ms once rules are installed.

I2C Protocol Simulation — master/slave I2C bus in Python over TCP sockets (JSON frames, ACK handshake) and a Verilog I2C master/slave with testbench.

EXPERIENCE

Tripple One Solutions Pvt. Ltd. — IoT & Robotics Intern | *Bangalore, Hybrid* Jun 2026 – Aug 2026

- Implemented device-to-cloud connectivity for prototypes over MQTT/HTTP telemetry.
- Built internal prototypes and R&D proof-of-concepts: sensor and development-board evaluation, and embedded firmware for Arduino and ESP32 microcontrollers (sensor integration, actuator and motor control).
- Developed STEM robotics and IoT kits together with the accompanying training content and documentation used to teach embedded systems and automation.

EDUCATION

PES University, Bangalore Sep 2024 – May 2028

B.Tech in Computer Science & Engineering · CGPA 7.46 / 10 · Minor in Medical Innovations and Technology

- Coursework: Software Engineering, Data Structures & Algorithms, Database Management Systems, Machine Learning, Operating Systems, Computer Networks, Computer Architecture; electives in Graph Theory and AR/VR (OpenGL/C++, Unity, Three.js).

Pre-University Course, Karnataka Board Aug 2022 – Feb 2024

ACHIEVEMENTS

- Represented India at the FIRST LEGO League International Open Championship, Sydney (2019) — qualified by placing 4th in India at the national championship, then finished 15th of 32 international teams in Australia.
- 1st Place — Best Project Award, FIRST LEGO League Regional (2019).
- 3rd Place — Aakriti Inter-School Design Competition (2020).

CERTIFICATIONS, MEMBERSHIPS & COURSES

Harvard ManageMentor — Leadership & Management (Harvard Business Publishing, 2024)

Enrolled: DevOps Training Program — LaunchED Global (batch starting Jan 2027)

Membership: IEEE Computer Society — Student Member (2026 – Present)

Robotics & electronics: STEMDROID — Robotics Levels 1–6 · PESU I/O: Automation with Arduino · SP Robotics: Robotics & IoT · CAMPK12 Python Level 3

INTERESTS

Linux & OS customization (Arch daily driver) · hands-on electronics (Arduino, LEGO EV3) · game development · music production · cycling