

Sujith Kumar

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PROFESSIONAL SUMMARY

A practical and driven professional with a strong foundation in computer science and a passion for continuous learning. Experienced in teaching, tech integration, and web development, with a focus on real-world application. Passionate about digital security, design, automation and knowledge sharing.

EDUCATION

MCA	Ramaiah Institute of Technology (VTU) <i>CGPA: 9.3</i>	<i>Dec 2024 – May 2026</i>
B.Ed	Sri Kongadiyappa College (BNU) <i>CGPA: 8.86</i>	<i>Aug 2018 – Nov 2020</i>
B.Sc (PCM)	Sri Kongadiyappa College (BU) <i>Percentage: 56.3%</i>	<i>Mar 2011 – May 2014</i>

TECHNICAL SKILLS

Languages:	Java, Python, TypeScript, JavaScript, C, Bash, HTML/CSS
Frameworks & Libraries:	React.js, Node.js, Vue.js, Express.js, React Query, Redux Toolkit, Vite, JWT, Socket.io, Joi, MUI
Databases:	MongoDB, SQL (MySQL)
Cloud & DevOps:	AWS, Docker, GitHub Actions, Jenkins, Nginx

PROJECTS

Agentic Workstation: Multi-Agent Orchestration Platform | *Python,* Nov 2025 – Present
Click, Rich, PyYAML, Jinja2, Pytest, Structlog, Hatchling, Docker, LLMs

- Architected an MIT-licensed **File-Based Flow Engineering (FBFE)** framework using a "Stateless Core / Stateful Edge" pattern, replacing vector databases with deterministic file-system state machines to ensure 100% reproducibility and zero-infrastructure overhead.
- Orchestrated a modular ecosystem of **40+ specialized autonomous agents** across Planning, Implementation, and Research workflows, strictly enforcing context boundaries via validated artifact handoffs rather than probabilistic retrieval.
- Engineered a production-grade CLI toolchain using **Click** and **Rich**, combining interactive TUIs and multi-format output with custom middleware for caching, exponential backoff, and session recovery to ensure resilience during long-running operations.
- Implemented a dynamic prompt engineering engine using **Jinja2** that injects hierarchical context (Base Rules, Personas, Session State) into LLM calls while enforcing strict token budgets to optimize API costs and latency.
- Developed an immutable observability layer using **Structlog** to serialize execution events into a "Canonical Ledger," enabling full session replayability, audit-ready decision traceability, and automated generation of Architecture Decision Records (ADR).
- Established enterprise-grade open-source maintenance standards by managing dependencies with **Hatchling**, enforcing static type checking via **MyPy**, and maintaining a **Pytest** suite with 100% coverage across all agent logic.

Eagle Campus: Educational & Productivity Platform | *Node.js, Express.js,* June 2025 – Present
MongoDB, JWT, AWS S3 & EC2, Socket.IO, Google Gemini API, Nginx

- Comprehensive college management module featuring a multi-tiered Role-Based Access Control (RBAC) system with File sharing, Messaging, Assignment creation and handling.

- Engineered a multi-layered security system featuring JWT authentication, granular role-based access control (RBAC), mandatory email verification, input spam protection and rate limiting at all critical endpoints and brute-force login protection with account lockout.
- Architected & built a modular, service-oriented backend using Express.js, featuring distinct controllers, a service layer, and middleware to ensure scalability and maintainability.
- Built the administrative backend for managing complete academic lifecycle, including student application approval, faculty assignments & subject enrollment, with data-integrity-first cascading logic.
- Engineered a secure, real-time attendance workflow, with live roster updates managed via authenticated Socket.IO rooms and time-sensitive session codes.
- Developed the backend for a multi-level reporting suite that aggregates attendance data and anonymous student feedback, providing detailed drill-down reports for analyzing performance.
- Engineered a secure AWS S3-based drive featuring a folder hierarchy, bulk .zip downloads, timed public links, and private opt-in sharing, all deployed on AWS EC2 and secured via pre-signed URLs.
- Integrated the Google Gemini LLM API to create an interactive AI planner that generates complex task plans from natural languages, admin workflow to create timetable for the department.
- Developed the backend for a complete real-time messaging service between users using Socket.IO.

Sujith's Library | *Vue.js, TypeScript, Vite, VitePress, GitHub Actions, Node.js* Feb 2025 – Present

- Created and maintaining **Sujith's Library**, an open-source learning platform with 800+ pages on programming concepts, problems and examples.
- Built the static site generator with VitePress (Vue.js & TypeScript) and configured a CI/CD pipeline using GitHub Actions for automated, seamless deployment.

PUBLICATIONS & CASE STUDIES

“Agentic Workstation: Mitigating Context Drift in Multi-Agent Systems via File-Based Flow Engineering (FBFE)”, **Ongoing Research**, Comparative analysis of deterministic state machines versus vector-based RAG for maintaining code integrity and reproducibility in autonomous software generation. *Dec 2025*.

“Zero Trust Enforcement Through NGFW and Deception using Honeypot Architecture”, **to be published**, Implementation & analysis of Next Generation Firewall in Zero Network for Intrusion detection & Prevention. *30th July 2025*.

“Beyond Traditional Cryptography: An Adaptive Chaos-Based Encryption and AI-Driven Anomaly Detection Framework for Securing Real-Time Embedded Systems”, **2nd National Level Student Research Conference (SRC-2025)**, Dayananda Sagar College of Arts, Science & Commerce, *14th March 2025*.

“Coordinated Web Attacks: A Chained Threat Vector”, **Case Study Presentation**, MSRIT, Demonstrated a real-world, large-scale attack campaign involving obfuscated JavaScript injections, traffic distribution systems (HelloTDS), social engineering tactics, and malware loaders (PEAKLIGHT). *26th June 2025*.

“Cryptography Through Graph Structures: A Study of RSA and ECC”, **Case Study Presentation**, MSRIT, *12th February 2025*.

WORKSHOPS & TRAININGS

IoT 4.0: Internet of Things in Industry, Healthcare and Smart Cities 18–20 April 2025
3 Day hands-on workshop Conducted by Dr. Manjunath M.

- Attended a hands-on workshop on IoT systems, automation, and smart robotics.
- Worked with Arduino, NodeMCU, and various sensors for IoT applications.
- Implemented internet-connected signaling and automation using sensor inputs and Python scripting.

EXPERIENCE

Administrative and Teaching Faculty

June 2014 – June 2023

Geethanjali Public School, Yelahanka

- Taught Science and Mathematics using interactive, student-centric methods, integrating digital tools to enhance engagement and learning outcomes.
- Led the transition to technology-enhanced education by implementing Google Workspace for Education, training staff, and setting up secure student accounts.
- Developed and maintained the school's website and digital presence, including content management across social media platforms.
- Designed and managed a digital fee-entry and student data system, significantly improving administrative accuracy and efficiency.
- Oversaw administrative operations—finance, admissions, inventory, and records—by optimizing workflows for scalability and long-term efficiency.
- Organized academic and extracurricular events, serving as liaison between staff, management, and stakeholders to ensure seamless coordination.

Sadhanapada Program Participant and Volunteer

June 2023 – March 2024

Sadhguru Gurukulam, Isha Foundation, Coimbatore

- Participated in an intensive 10-month advanced yoga training program focused on personal growth, discipline, and spiritual development.
- Volunteered in the coordination and execution of various events and programs, contributing to the smooth functioning of the ashram activities.
- Maintained strict discipline and adhered to daily practices while balancing the responsibilities of volunteering and training.
- Engaged in self-development practices that enhanced focus, mindfulness, and leadership abilities, which contributed to personal and professional growth.