Sathwik P. Kallapur

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SUMMARY

A driven software engineer with a keen sense of morality and objectivity, and an appetite for knowledge and cognitive strength. 2.5+ years of industry experience in backend systems, high-performance computing, and geospatial data processing. Proven track record in optimizing API performance (50x speed increase at Latlong) and refactoring mission-critical backend logic. Recently completed Master of IT at Monash University with strong academic performance.

EDUCATION

Monash University   Feb 2024 – Dec 2025
Master of Information Technology (MIT)   *Clayton, Australia*
- GPA: 3.31/4.0. Key units: Cloud Computing, Advanced DBMS, Multi-Agent Systems, Discrete Optimisation.
- US equivalent GPA: 3.88/4.0. (Calculated via WES iGPA tool)

PES University   July 2018 – July 2022
Bachelor of Technology in Electronics and Communications   *Bengaluru, India*
- Major GPA: 8.16/10. Minor in Computer Science (GPA: 8.25/10).
- Focused on Data Structures, Image Processing, Computer Networks, Generic Programming, and Operating Systems.

EXPERIENCE

Software Development Engineer (SDE) 1   July 2023 – Dec 2023
Medpho (Telimedic Technologies)   *Remote, India*
- Developed full-stack features and AI chatbots from scratch using Node.js, Next.js, and PostgreSQL.
- Integrated Google Dialogflow to build intuitive healthcare chatbots for Tier 2/3 Indian cities.

Software Development Engineer (SDE) 1   July 2022 – July 2023
CoffeeBeans   *Bengaluru, India*
- Refactored financial calculation logic by replacing floats with a custom type, ensuring perfect precision.
- Optimized backend data handling for e-commerce and AI recommendation engines, increasing throughput.
- Maintained multi-DBMS architectures and implemented complex concurrency patterns in Go.

Software Engineering Intern   Sep 2021 – June 2022
Latlong (ONZE Technologies)   *Bengaluru, India*
- Migrated API infrastructure from Ruby on Rails to Go, yielding 50x faster execution and 20x less memory usage.
- Built high-performance RESTful APIs for Geocoding and Driving Directions using PostGIS.
- Developed a Geocoding algorithm 2x more accurate than Google Maps API for the local context.

TECHNICAL SKILLS

Languages: Golang, C/C++, Python, Java, Rust, Ruby, HTML/CSS, JavaScript
Backend: Node.js, Next.js, FastAPI, Flask, Django, REST APIs, Microservices, Concurrency
Data & ML: PostgreSQL, MongoDB, Redis, OracleDB, PostGIS, Reinforcement Learning, Computer Vision
Infrastructure: OCI, AWS, Docker, Terraform, Git, CI/CD, Nginx

PROJECTS

SafeTrek | *FastAPI, Vue3, PostGIS, Docker*   2025
- Interactive road safety analysis platform using geographic visualization to support urban policy decisions.
- Implemented complex geospatial queries in PostGIS and containerized the entire stack for deployment.

Racing Line Mapper | *Golang, Reinforcement Learning, OpenCV*   2025
- Reinforcement Learning system mapping optimal racing lines using MDP and image-processed track skeletons.
- Developed a custom arcade physics engine and transformed raw track maps into semantic Frenet frames.

MacOS Style Portfolio | *Vue3 JS, Vite*   2025
- Personal portfolio website that recreates the MacOS GUI experience with window management.
- Developed using Vue3 and Vite, focusing on a responsive and interactive desktop-like interface.

Generic Red-Black Trees | *C++ Template Programming*   2021
- STL-compatible RBT implementation with bidirectional iterators and custom predicate support.

INTERESTS

High Performance Software Design, System Design & Engineering, Game Development, Physics Engines, Rock Music, Sim Racing, Mindfulness & Intellectual Discourse.