

# Sathwik P. Kallapur

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## SUMMARY

Driven and determined 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 AI chatbot development. Proven track record in optimizing API performance (50x speed increase at Latlong) and refactoring mission-critical financial logic. Recently completing Master of IT at Monash University with strong academic performance.

## EDUCATION

<b>Monash University</b>	Feb 2024 – Dec 2025
<i>Master of Information Technology (MIT)</i>	<i>Clayton, Australia</i>
•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)	
<b>PES University</b>	July 2018 – July 2022
<i>Bachelor of Technology in Electronics and Communications</i>	<i>Bengaluru, India</i>
•Major GPA: 8.16/10. Minor in Computer Science (GPA: 8.25/10). •Focused on Generic Programming, Data Structures, and Operating Systems.	

## EXPERIENCE

<b>Software Development Engineer (SDE) 1</b>	July 2023 – Dec 2023
<i>Medpho (Telimedec Technologies)</i>	<i>Remote, India</i>
•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.	
<b>Software Development Engineer (SDE) 1</b>	July 2022 – July 2023
<i>CoffeeBeans</i>	<i>Bengaluru, India</i>
•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.	
<b>Software Engineering Intern</b>	Sep 2021 – June 2022
<i>Latlong (ONZE Technologies)</i>	<i>Bengaluru, India</i>
•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

<b>SafeTrek</b>   <i>FastAPI, Vue3, PostGIS, Docker</i>	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.	
<b>Racing Line Mapper</b>   <i>Golang, Reinforcement Learning, OpenCV</i>	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.	
<b>MacOS Style Portfolio</b>   <i>Vue3 JS, Vite</i>	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.	
<b>Generic Red-Black Trees</b>   <i>C++ Template Programming</i>	2021
•STL-compatible RBT implementation with bidirectional iterators and custom predicate support.	

## INTERESTS

High Performance Software Design, Systems Engineering, Game Development, Physics Engines, Rock Music, Simulation Racing, Mindfulness, Intellectual Discourse.