KARTHIK NAMBOORI

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Education

PES University	**2021 - Present**
● Bachelor's in Computer Science and Engineering | **CGPA: 9.51/10.00**	**Bangalore, Karnataka**

Relevant Coursework

[1] Operating Systems **[2]** OOPS (Python, Java) **[3]** Computer Networks **[4]** Data Structures & Algorithms **[5]** Database Management

Skills

Languages: Python, C/C++, Java, JavaScript, SQL, HTML/CSS, R
Full Stack: Next.js, React, Node.js, Django, Redux, React Native (Mobile Dev), Flask
Databases: Redis, MySQL, PostgreSQL, MongoDB, Firebase, TimescaleDB
Frameworks/ Tools: Docker, Kubernetes, GCP, AWS, Vercel, Kafka, Spark, OpenMPI, CUDA, Git and Github, Scikit Learn, HuggingFace

Work Experience

AVEVA | *Software Developer Intern* — **May 24 - July 24**
● Leaders in industrial software empowering companies to enhance industrial ingenuity and environmental sustainability.
● Engineered LLM solutions for the in-house XR framework, including an **NL2SQL model (BLEU 0.80)** using **TinyLlama** and **flan-t5**, A **speech2text** plugin for **Oculus VR** enabling hands-free navigation and a **prompt classifier (92% accuracy)** for **LLM load balancing.**
● Containerised the LLM's as services for AVEVA's intranet using **Docker** and **FastAPI**

Yucca Scalian Group | *Software Developer Intern* — **June 23 - July 23**
● Specialist in digital services for major players in the food industry.
● Collaborated in a team of 2 to develop **Nativecrash**, a simple alternative to **Firebase Crashlytics, for react native apps** using **Node.js, Next.js and PostgreSQL** and a **personalized map for delivery agents to streamline client order deliveries**, reducing API calls by **70%.**

Projects

Casa Digital | *Node.js, React, MQTT, Kafka, TimescaleDB, Docker* — **March 2023**
● Developed an **event-driven IoT home monitoring system** with logs from 5+ devices ingested via **MQTT** achieving **75% smaller** packet sizes than **HTTP**, used **Kafka** for queuing and **TimescaleDB** for efficient high-throughput data ingestion and quick analysis.

Engo: A Rule Engine | *Python, React, React-Flow, Flask, PostgreSQL, Docker* — **October 2024**
● Engineered a custom rule engine using **AST/DAG** optimization to evaluate complex business rules with parser support of **10+** operators and **5+** user defined functions along with a **React Flow visualization UI** and **Flask API** enabling intuitive rule creation and management.
● Deployed as **3** cross-platform microservices using **Docker buildx/compose** supporting **ARM64/AMD64** architectures

YAKt (Yet-Another-KRaft) | *Python, Flask* — **November 23**
● Implemented a **Raft-based distributed metadata management system** mimicking **Kafka's KRaft protocol**, with **log replication**, **leader election** and CRD APIs via a robust **HTTP server** for brokers and clients.

Parallelyze | *OpenMPI, Python, Numpy* — **March 24**
● Developed a **distributed parallel computing framework** for **training regression models** using OpenMPI, achieving a **66.6% reduction in training time** by scaling from **3 to 8 nodes.**

Notable Achievements

[1] JPMorgan Chase & Co Code For Good Hackathon: Placed **1st** among **300+ finalists** from **2M+ participants nationwide**
[2] Smart India Hackathon: **Finalist**, ranked in the **top 6** of **12K finalists** from **5M+ participants nationwide**
[3] C. N. Rao Merit Scholarship Award: Awarded to the **top 2%** of the batch for outstanding academic performance **(x3)**
[4] Hashcode by The Innovation Lab@PES: Secured **1st place** among **160+ participants** from **5K+ applicants**
[5] Karnataka Common Entrance Test (KCET): Achieved a rank of **332** out of **250K+ applicants** statewide.

Research and Select Publications

[1] Distributed Inference of LLM's on Heterogeneous Edge Devices — *MOBICASE' 24 (under review)*
[2] Empowering Liver Disease Diagnosis with Convolutional Neural Networks — *ICCPCT' 24*

Volunteering Experience

Teaching Assistant: Data Analytics (UE22CS342AA2), PES University — **July 24 - Present**
● **Prepared course materials on 5+ key topics** (e.g., PCA, ANOVA, Correlation), **organized hackathons**, streamlined Kaggle notebook submissions for **750+ students** and automated R notebook-to-PDF conversion for efficient evaluation.

Google Developer Student Club | Web Dev Domain Lead — **August 23 - May 24**
● Led a team of 6 to develop the official **GDSC PESU website (gdscpesu.com)** using **Next.js** and organized **Hackfest 2023, promoting open-source** giving birth to projects and contributions with **100+ GitHub stars and 300+ forks.**