

SPURTI S M K

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Education

B.E. Computer Science Engineering — KLE Technological University, Hubli
CGPA: **8.62 / 10**

2023–2027

Experience

Student Developer — CDPI (eGovernments Foundation & Infosys)

Mar 2026–Present

Go · Kafka · PostgreSQL · Docker · Kubernetes · Distributed Systems

- Migrated **2 Spring Boot microservices** to idiomatic Go within DIGIT 3.0; reduced container memory by **>75%** (~600 MB → <100 MB/pod) and cold-start time from **15 s** → **<100 ms**.
- Designed goroutine-based Kafka consumers with bounded channel semaphores, increasing event throughput by **>200%** over the Java thread-pool baseline; containerized services with Docker.
- Reduced query latency by **~50%** by replacing JPA/Hibernate with optimized **sqlx** executions and custom struct mappers; designed PostgreSQL schemas with targeted indexing.

Project Intern — Centre for Visual Information Technology (CEVI), Kalpith Project

Oct 2025–Present

PyTorch · Stable Diffusion · NeRF · Point Clouds · Computer Vision

- Building a text-to-3D pipeline: **text prompt** → **Stable Diffusion** → **NeRF** → **mesh** → **motion synthesis** for heritage and architectural content.
- Built transformer-based point-cloud completion models (**PoinTr**, **AdaPoinTr**) for degraded heritage monuments from incomplete LiDAR scans; achieved **0.0142 Chamfer Distance**, **78.4% F-score**, **0.74 Normal Consistency**.

Software Development Intern — Knitspace

Jul 2025–Sep 2025

Node.js · PostgreSQL · Full-text Search · REST APIs

- Engineered full-text search over **21,000+ product records** using PostgreSQL GIN indexes, **tsvector/tsquery**, and custom ranking functions.
- Optimized query plans and indexing strategy, reducing **p99 search latency** from **~800 ms** to **~120 ms**.

Publications & Research

NTIRE 2026 Challenge on Efficient Low-Light Image Enhancement: Methods and Results

CVPR Workshop NTIRE 2026 · Co-author · Rank **14/1,500+** (**Top 0.9%**)

- Designed lightweight **ResLNet** under a strict **1 MB** constraint; achieved **0.5791 SSIM** and **0.5894 LPIPS** on the official benchmark.

Early-Stage Parkinson's Disease Detection from Longitudinal MRI — *Under Review*

- Engineered a pipeline on 180 MRI scans from 60 patients using 3D CNN features and ElasticNet with LOPO-CV; achieved **80% recall**, **0.78 ROC-AUC**.

Emotion-Aware Mental Health Support System — *Under Review*

- Built a memory-augmented system using Mistral-7B, DistilBERT, FAISS retrieval over **6,505 exemplars**, VAD reranking, and episodic memory; alignment gate achieved **F1 = 0.993**.

Projects

E-Sannidhi — *Smart India Internal Hackathon 2025*

- Built an offline-first telemedicine platform using React, Node.js, PostgreSQL, and IndexedDB; enabled healthcare workflows and synchronization in low-connectivity environments. **Rank 31/200+ teams**.

CampKart

- Built a full-stack campground marketplace with React, Express, PostgreSQL, REST APIs, authentication, protected routes, reviews, and listing management.

Achievements

- Amazon ML Summer School 2026** — Selected among **~3,000 / 134,000+ applicants** nationwide.
- Amazon ML Challenge 2025** — **AIR 241/82,000+** (Top 0.3%); Multimodal Price Prediction, **45.47% SMAPE**.
- WiDS Datathon 2025** — **Rank 186/2,000+**.
- NTIRE 2026** — **Rank 14/1,500+**; CVPR 2026 Workshop Proceedings.

Technical Skills

Languages: Python, Go, C++, JavaScript, SQL **Backend:** Go Microservices, Kafka, PostgreSQL, Docker, Kubernetes, REST APIs, Git, Linux

ML/CV: PyTorch, OpenCV, Stable Diffusion, NeRF, Transformers, 3D CNNs, LightGBM, XGBoost, Scikit-learn, FAISS, Hugging Face, RAG

Leadership

Research & Documentation Cluster Lead — Word's Worth Club, KLE Technological University

2023–Present

Led research and documentation across **14 workshops** and **8 competitions**, coordinating speakers, judges, volunteers, and organizing teams.