

Jha Saket Sunil

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EDUCATION

National Institute of Technology Karnataka, Surathkal

Aug 2023 – Present

Bachelor of Technology, Civil Engineering, CGPA – 8.53

Minor in Information Technology, CGPA – 9.67

EXPERIENCE

AI Engineer Intern

Remote – Full Time

Kalppo

May 2025 – July 2025

- Developed a scalable pipeline using Google Cloud Vision, structured content generation, and fuzzy sequence matching to automate student workbook evaluation, **reducing** manual assessment **time by 80%**.
- Containerized a FastAPI-based **REST service** for input-driven STEM question and **SMILES** [🔗](#) code generation, featuring a LaTeX-to-image rendering pipeline and Supabase integration for media storage.
- Collaborated on building an AI-driven **Microservice** for automated question extraction from PDFs using Mistral OCR, LangChain, and Gemini for structured parsing, with PostgreSQL for metadata storage.

PROJECTS

FileForge | FastAPI, PostgreSQL, MinIO, Docker, Alembic

[fileforge](#) [🔗](#)

- Designed and developed a distributed file storage system supporting nested folders, file and folder uploads, ZIP extraction, and a personalized favorites system with secure, user-level access.
- Built secure authentication and session management workflows using JWT and OAuth2.
- Integrated MinIO with optimized PostgreSQL indexing, achieving **40% faster** file metadata queries.
- Engineered modular API routes with a Dockerized setup for seamless frontend integration and scalability.

ATLAS | YOLO, Ultralytics, Bytetrack, Pydantic

[github/atlas](#) [🔗](#)

- Developed ATLAS (Adaptive Traffic Light Allocation System) using YOLOv8 & ByteTrack for real-time vehicle detection, tracking and classification with **Region Mask** [🔗](#) and frame-based confirmation filtering.
- Implemented **DBWSA** [🔗](#) to dynamically assign green signal time based on vehicle density and type.
- Achieved **25%** average & **50%** peak efficiency gains over fixed signals across **500+** simulated traffic scenarios.
- Configured a flexible pipeline supporting multi-source input video, YAML configs, & Pydantic validation.

FilmFusion | Python, FAISS, Sentence Transformers, Streamlit

[filmfusion](#) [🔗](#)

- Built a hybrid movie **recommendation system** using content-based filtering and **semantic search** with Sentence Transformers, leveraging FAISS for efficient embedding storage and similarity-based retrieval.
- Enabled multi-genre selection and dynamic filtering based on language, popularity, runtime, & release year.

TECHNOLOGIES

Languages: Python, C/C++, SQL

Database: PostgreSQL, MySQL, Redis, MinIO, ChromaDB

Developer Tools: Git, Docker, Bash, Google Cloud, Kubernetes, MLflow

Frameworks: FastAPI, LangChain, PyTorch, TensorFlow, SQLAlchemy, Hugging Face, DeepEval

Libraries: Scikit-learn, Pydantic, Pandas, Alembic, SpaCy, OpenCV, Celery

EXTRACURRICULAR ACTIVITIES

- Winner, Kaggle x Skill Assessment Machine Learning Competition – Rank 1/1846.
- Explained **Mamba SSM** [🔗](#) and its advantages in efficient **Sequence Modeling** at **Web Club** [🔗](#), NITK.
- Assisted in building a YOLOv5-based fire-fighting robot at **IE NITK** [🔗](#), achieving **86% mAP@0.95**.