# Samiksha Shriram Kotgire

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## EDUCATION

| Degree | University/Institute | Year | CGPA/Marks(%) |
|---|---|---|---|
| B.Tech in Biomedical Engineering | IIT Hyderabad | 2026 | 7.50 |
| XII (Maharashtra State Board) | Yeshwant Mahavidyalay, Nanded 431602 | 2022 | 75.17% |
| X (CBSE) | Podar International School, Nanded 431601 | 2020 | 95.20% |

## WORK EXPERIENCE

**Orica** — *AI Engineer Intern*

*Enterprise GenAI Solutions for HR and Knowledge Systems*

*Tech Stack: Azure (Function Apps, App Services, Cognitive Search, KeyVault), OpenAI, GraphRAG, LanceDB, Python, LLMs*

- Architected production-grade HR chatbot infrastructure by replicating the production system into a secure Azure-based development environment, enabling safe experimentation, debugging, and smoother deployment of new conversational features.
- Engineered a vector-semantic hybrid search pipeline in Azure Cognitive Search by combining BM25 keyword ranking with OpenAI embedding-based vector search and manually refining prompts and ranking profiles to improve the relevance and contextual understanding of HR chatbot responses.
- Implemented a Graph RAG framework over unstructured HR and patent text by designing prompts for entity-relation extraction and constructing knowledge graphs with LanceDB and node2vec, enabling multi-hop question answering and more transparent reasoning for complex queries.

## PROJECTS

**Low-Latency Fraud Detection Inference Engine & Deployment Pipeline**

- Architected and trained an XGBoost credit-card fraud detection pipeline by applying SMOTE for 0.17% class imbalance and Optuna for hyperparameter tuning, plus feature engineering and cross-validation to harden model generalization.
- Deployed the model as a Dockerized FastAPI REST service with async workers, connection pooling, autoscaling, MLflow-backed tracking and CI/CD rollouts — delivering sub-100 ms real-time inference and achieving 87% recall on fraudulent-transaction detection with production observability and rollback capability.

**High-Performance Threading Framework**

- Developed a C++ multithreading framework to accelerate matrix operations, achieving over 60% performance improvement by implementing advanced parallelization strategies, including CPU thread affinity and dynamic workload balancing.
- Conducted systematic performance analysis and benchmarking across various thread configurations to validate the framework's scalability and resource efficiency for CPU-bound, computationally intensive tasks.

**Order Matching Engine**

- Engineered a stock order matching system in C++17 implementing Price-Time Priority matching algorithm with std::map and std::queue for efficient order book management across BUY/SELL sides.
- Integrated SQLite3 for persistent storage of users, orders, and trade history via an embedded database, with a CLI-driven interface supporting real-time order submission and order book inspection.

**Movie Recommendation System**

- Built a content-based movie recommendation system using TF-IDF vectorization and SVD dimensionality reduction (3000 to 30 features) for efficient similarity search across 4800+ movies.
- Integrated TMDB API for dynamic movie poster retrieval and deployed an interactive Streamlit application achieving 90% memory optimization and 4x faster real-time recommendations.

## SKILLS

- **Languages:** Python, C, C++, SQL, MATLAB
- **Computer Science Fundamentals:** Data Structures & Algorithms (DSA), Object-Oriented Programming (OOP), Operating Systems, Database Management Systems (DBMS)
- **Libraries:** NumPy, Pandas, Matplotlib, Seaborn, Scikit-Learn, TensorFlow, NLTK, SciPy
- **Tools:** Git, GitHub, VS Code, Docker, Docker Compose, Solid Edge, Simulink (MATLAB), PostgreSQL
- **Microsoft Azure:** OpenAI Integration, Cognitive Search, Function Apps, Blob Storage, App Service Plans, Storage Accounts
- **AI/ML:** Large Language Models, RAG Architecture, Graph RAG, Text Embeddings, Transformer Models, Hybrid Search

## RELEVANT COURSES

- **Computer Science & Machine Learning:** Introduction to Programming, Data Structures & Applications, Artificial Intelligence, Introduction to Embedded Systems, Foundation of Natural Intelligence
- **Mathematics & Analytics:** Mathematical Modeling and Systems Biology, Elementary Linear Algebra, Calculus, Transform Techniques, Differential Equations, Probability and Random Variables, Introduction to Statistics, Complex Variables, Numerical Methods