# NAITIK SHAH

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## EDUCATION

**Oregon State University, Corvallis, OR**                    *April 2024 – December 2025*
Master of Engineering in Computer Science
**Coursework:** ML, DL, Computer Graphics, Scientific Visualization, Distributed Systems, Computer Architecture

**University Of Mumbai, India**                    *July 2018 – May 2022*
Bachelor of Engineering in Computer Engineering
**Coursework:** DSA, OS, CN, AI/ML, Mobile App Development, Big Data Analytics

## TECHNICAL SKILLS

**Languages:** Python, Go, Java, C++, JavaScript, SQL
**Backend:** Spring Boot, Node.js, Express, Flask
**Distributed Systems:** Kafka, PyFlink, Avro, Docker, Kubernetes, Redis, gRPC
**ML/AI:** PyTorch, TensorFlow, River, LLM-based pipelines
**Parallel/GPU:** CUDA, OpenMP, OpenCL, MPI
**Cloud & DevOps:** AWS, GitHub Actions, Jenkins
**Databases:** PostgreSQL, TimescaleDB, MySQL, MongoDB
**Frontend:** React, Angular, LWC

## PROFESSIONAL EXPERIENCE

**Student Software Developer**                    *December 2024 - Present*
**Oregon State University, Corvallis, USA**

- Built modular **Salesforce LWC** interfaces using reactive getters, wire adapters, and custom pub/sub events to support complex multi-participant intake flows.
- Developed scalable **Apex controllers** using fflib service/selector layers, typed DTOs, and bulkified DML to process hierarchical guardian-participant records.
- Designed **schema-driven JSON payloads** with server-side validation pipelines, reducing intake submission errors by **20%** and improving data consistency.
- Automated guardian–participant relationship creation using PMM objects, dependency injection, and optimized SOQL, increasing onboarding efficiency.
- Debugged production issues using **Apex heap analysis, LDS profiling, and async orchestration logs**, improving system reliability and reducing latency.

**Software Engineer**                    *August 2022 – July 2023*
**Hexaware Technologies Pvt. Ltd., Mumbai, India**

- Developed enterprise backend services using **Java, Spring Boot, and Hibernate** with a clean layered architecture (Controller → Service → DAO), achieving **95% JUnit/Mockito coverage**.
- Optimized REST APIs with **Redis caching, batching, lazy loading, pagination, and HikariCP pooling**, reducing latency by **30%**.
- Integrated microservices using **Feign clients**, JSON schema validation, and **Hystrix circuit breakers** for cross-service resilience.
- Built responsive UIs with **Angular + RxJS**, improving usability and increasing client adoption by **20%**.
- Managed CI/CD deployments using **Jenkins and GitLab CI**; contributed to Agile sprints, code reviews, and iterative feature releases.

**Software Developer Intern**                    *October 2019 – September 2020*
**Orno Infosys India, Mumbai, India**

- Built a web-based payroll & HR automation system using **Java, JSP/Servlets, and MySQL**, reducing manual reporting overhead for operations teams.
- Implemented role-based authentication, salary computation modules, and financial report exports using **modular MVC architecture**.
- Enhanced UI usability using **JavaScript + Bootstrap**, improving internal user adoption by **15%**.
- Performed end-to-end debugging and QA using **Eclipse IDE**, SQL profiling, and log-based diagnostics to ensure stable production releases.

## PROJECTS

**CalSync AI - Intelligent Calendar Automation System (Go, Python, JS, Docker, LLM)**       *November 2025*

- Built a **local-first LLM productivity system** that integrates with **Google Calendar** to auto-generate **personalized learning plans** and optimized schedules.
- Designed a **modular microservice architecture** using **Go (backend)**, **Python (LLM engine)**, and a **JavaScript frontend**, fully **containerized with Docker**.
- Implemented a secure **Google OAuth 2.0 flow**, enabling users to connect their own **Google Cloud credentials** and sync events through custom **REST APIs**.
- Developed an intelligent **scheduling engine** that performs **availability analysis**, proposes **conflict-free schedules**, and updates calendars dynamically.
- Delivered an **end-to-end system** covering **frontend UX**, **backend API design**, **OAuth integration**, and **cross-service communication**.

**Real-Time System Monitoring (Kafka, PyFlink, TimescaleDB, Docker)**       *September 2025*

- Built a **real-time monitoring pipeline** using Kafka, Docker, and PostgreSQL (TimescaleDB) to stream, store, and query high-volume system metrics.
- Developed **PyFlink streaming jobs** for feature engineering and **real-time anomaly detection** using rolling z-scores, EWMA, and online ML models (River, ARIMA, LSTM).
- Implemented **schema registry (Avro)** and alerting workflows (Slack) to ensure reliable data pipelines and rapid incident response.
- Gained hands-on experience in distributed systems, real-time data engineering, aligning with modern cloud and SRE infrastructure roles.

**Cryo-EM Visualization Analysis (OpenGL, C++, ParaView)**       *December 2024*

- Built pipelines for **GPU-accelerated visualization** of Cryo-EM datasets using **Python, C++, and OpenGL**.
- Implemented **Contour Line Visualization and Morse-Smale Segmentation** with ParaView, cutting computation time by **95%**.
- Applied **topological data analysis** (persistence homology) for feature extraction, highlighting expertise in **parallel computing** and **scientific visualization**.

**AUGMENTED REALITY BASED MENU APPLICATION (Unity, Vuforia)**       *January 2022*

- Designed and implemented an augmented reality-based application using **Unity Engine** and **Vuforia SDK**, enabling marker-based tracking to seamlessly integrate **3D virtual models** of food items into real-world environments for enhanced menu visualization.
- Published research in International Research Journal of Engineering and Technology. (Link)

## LEADERSHIP & ACTIVITIES

- Organized **technical workshops** as part of IEEE Student Branch, promoting collaboration and innovation.
- Mentored undergraduates in algorithms, Python, and data analysis.
- Conducted peer resume reviews and mock interviews.