Krina Vipul Shah

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Education

Indiana University Bloomington | Master's in Computer Science **Aug 2023 - May 2025**
Courses: Data Structures & Algorithms, Software Engineering, Computer Networks, Info Visualization **GPA: 3.8/4.0**

University Of Mumbai | Bachelors of Engineering in EXTC **Aug 2017 - May 2021**
Courses: Cloud Computing, IOT, Big Data & Distributed Systems, Deep Learning **GPA: 9.34/10.0**

Work Experience

Software Development Engineer | NupulseCV | Raleigh, North Carolina **Jul 2024 - Dec 2024**
Python, PostgreSQL, Svelte, Django, Plotly, REST APIs, AWS S3, Postman

- Streamlined ingestion of **10,000+ logs per week** using a Python-based log parser, **reducing manual processing by 90%** and improving data pipeline efficiency by designing a PostgreSQL schema with normalization, **enhancing query performance by 35%**
- Built a web application using Svelte and Django, integrating RESTful APIs for real-time data visualization with Plotly's interactive graphs, **increasing analytical insights by 40%**, optimized graph rendering with WebGL and ScatterGL to mitigate performance lags
- Automated ETL log retrieval and processing from AWS S3 using a script, eliminating manual intervention and **reducing ingestion time by 60%**, added archival and validation checks to ensure successful parsing and insertion into tables
- Optimized request handling for log ingestion and data retrieval APIs by implementing asynchronous data processing, **decreasing response times by 50%**, conducted API testing with Postman to ensure reliability

Software Engineer | LTIMindtree Limited | Mumbai, India **Jun 2021 - Jul 2023**
Java, Spring Boot, MVC, Jenkins, Unix, Junit, SonarQube, Terraform, OpenShift, GSON

- Processed **1M+ financial transactions** monthly using Spring Batch and Spring Boot (Java), managing end-to-end Software Development Life Cycle (SDLC) processes, optimizing workflows and **reducing execution time by 30%** through multithreading
- Implemented Apache Drools Rule Architecture to automate business rules for transaction validations and journal entry generation, enabling real-time policy updates and **improving rule execution efficiency by 25%** through salience and agenda grouping
- Designed and integrated CI/CD pipelines using Jenkins, incorporating **SonarQube** for bug detection and JUnit for test automation, improving code quality, increasing test coverage, and **reducing manual deployment effort by 50%**
- Provisioned cloud infrastructure on AWS using Terraform, utilizing OpenShift for container orchestration and integrating Joinery and GSON for data processing, streamlining DevOps workflows and **reducing setup time by 40%**

Machine Learning and AI Intern | ExpertsHub | Chennai, India **Jun 2020 - Jul 2020**
Python, Scikit-Learn, Flask, JWT, Redis, Kubernetes, FastAPI

- Improved early-stage breast cancer detection by developing a medical imaging model using CNN architectures (ResNet, InceptionV3, VGG-16) and ML models (Random Forest, SVM, Logistic Regression), **achieving 86% accuracy and** enhancing diagnostic efficiency
- Ensured scalable, fault-tolerant deployment of a **FastAPI-based service with JWT authentication and Redis caching**, containerized with Docker and deployed on Kubernetes for automated load balancing in cloud environments
- Increased model reliability and **reduced diagnostic processing time by 15%** using 5-fold cross-validation for consistent predictions

Research Experience and Projects

Real-Time AI-Powered Stock Advisor GitHub **Jan 2025 - Mar 2025**
Apache Kafka, AirFlow, React, Tailwind, FastAPI, Docker, EC2, NLP

- Built a full-stack AI stock analytics platform (React, FastAPI, PostgreSQL) to ingest and visualize multi-year (2020-2024) stock trends from Yahoo Finance, with real-time 2025 stock/news data, dynamic filtering, and daily ingestion via **Airflow + Apache Kafka**
- Trained **LSTM models** on historical price data and NLP-extracted sentiment from news and social media to forecast 7–30 day stock movements, generating Buy/Sell/Hold signals with **<2.1 RMSE** and deploying the pipeline using Docker containers on AWS EC2

Wellness Tracking System GitHub **Jan 2024 − Apr 2024**
React, Node.js, MySQL, Spring Boot, Google OAuth, Docker, Azure, Redis

- Developed 'Fit Inc.', an interactive wellness tracking platform with a health-focused calendar for exercise routines and events, enabling real-time progress tracking and reminders using React, Node.js, Spring Boot, and MySQL, with Google OAuth for secure authentication
- Containerized with Docker and deployed on Azure, **achieving 99.9% uptime** with Redis caching for optimized performance

Seizure Risk Video Analyzer using Deep Learning GitHub **Jan 2024 − Apr 2024**
OpenCV, TensorFlow, Keras, Flask, Computer Vision

- Created a seizure-risk detection tool using OpenCV, TensorFlow, and Keras to analyze YouTube and synthetic video streams, flagging rapid flashes and unsafe transitions via HSV histograms, optical flow, and FFT-based cues, achieving **>91% detection accuracy**
- Integrated a Flask-based interface to auto-process videos in real time, dynamically applying grayscale filters or skipping flagged segments

Skills

Languages & Frameworks: Java (OCP Certified), JavaScript, TypeScript, Python, PHP, HTML5, CSS3, SQL (MySQL, PostgreSQL, Oracle), Spring Boot, React, Node.js, Django, FastAPI, GraphQL

Cloud & DevOps: AWS (S3, EC2, Terraform), Azure, Kubernetes, Docker, OpenShift, Jenkins, SonarQube, Git

Machine Learning & Data Processing: TensorFlow, Keras, PyTorch, Scikit-Learn, Pandas, OpenCV, Apache Airflow, Apache Kafka

Databases & Tools: RDBMS, NoSQL (MongoDB, Cassandra, Redis), ORM, Apache Drools, Spring Batch

Core Concepts: OOP, RESTful APIs, Unix/Linux, CI/CD, Agile/Scrum, Distributed Systems, System Design