Sai Sahana Bhargavi Byrapu

San Jose, CA | +1 (703) 732-7668 | sahanabhargavib@gmail.com | LinkedIn | GitHub

Professional Summary

Software Engineer with 6+ years of experience delivering data-driven solutions across CRM systems, enterprise applications, and ML-powered platforms. Expert in building analytics pipelines, predictive models, and scalable backend systems using **Python, Java, SQL**, and **cloud** technologies. Proven track record in designing A/B testing frameworks, optimizing system performance, and translating data insights into actionable product improvements. Demonstrated ability to work independently on complex software engineering projects, delivering high-quality code. Strong leadership in cross-functional Agile environments with expertise in full-stack development, distributed systems, and production support. Proficient in **Large Language Models (LLMs), NLP,** and **MLOps** practices, with a strong foundation in **algorithm design** and **data processing**.

Technical Skills

Languages: Python, Java, SQL, JavaScript, HTML/CSS
Frameworks & AI Tooling: TensorFlow, Scikit-learn, FastAPI, Flask, LangChain, HuggingFace Transformers, REST AI Services
AI / Machine Learning: Large Language Models (LLMs), Transformers, Prompt Engineering, Fine-Tuning, RAG Pipelines, Embeddings, Semantic Search, Model Evaluation, Predictive Modeling, algorithm design, data science, NLP
Vector & Retrieval Systems: FAISS, Chroma, Embedding Pipelines, Knowledge Retrieval, Context Injection
Data & Experimentation: ETL Pipelines, Kafka, Feature Engineering, A/B Testing, Uplift Modeling, Product Analytics
Cloud & MLOps: AWS (SageMaker, EC2, S3, Lambda), GCP(VertexAI, BigQuery), Docker, Kubernetes, CI/CD, Real-time Inference, Model Monitoring, Drift Detection, MLOps, AWS
Data & Analytics: PostgreSQL, MongoDB, MySQL
Cloud & DevOps: AWS (CloudWatch, CodePipeline, EC2, S3, Lambda), Docker, CI/CD, Git
Product Engineering: Microservices, REST APIs, Agile/Scrum, Rapid Prototyping, Cross-Functional Collaboration

Professional Experience

Software Developer, Cognier, Inc, United States — May 2024 – Present

- Defined core product metrics and analytics dashboards for **CRM** modules (sales, marketing, service) using **SQL** and **Python**, enabling leadership to track KPIs including lead conversion rates, campaign ROI, ticket resolution time, and customer engagement

- Designed and implemented lightweight data models in **PostgreSQL** and **MongoDB** to serve as source-of-truth for reporting, empowering teams with self-service analytics capabilities

- Built **A/B testing** and quasi-experimental frameworks for campaign effectiveness, lead scoring, and workflow automation, translating statistical results into actionable CRM process improvements

- Instrumented event tracking and logging across CRM microservices using Kafka and **REST APIs**, improving data quality and reducing event latency by 40% to enhance analytics reliability

- Developed Python-based backend analytics services using **FastAPI** and **Flask** for automated reporting, predictive lead scoring, and operational insights, applying **data science** and **machine learning** principles

- Implemented multimodal data analysis pipelines to process customer interaction data from emails, chat logs, and documents, improving lead prioritization accuracy by 25% and support resolution metrics

- Communicated data-driven insights to cross-functional stakeholders, enabling faster decision-making and workflow optimization across sales, marketing, and service operations

Software Engineer, breathing.ai, United States — Oct. 2023 – April 2024

- Led team of 8 developers delivering UI and Python-based backend enhancements, implementing component-level success metrics and data-driven features that increased user base by 5%

- Designed and executed A/B tests and feature experiments for web and wearable platforms, providing actionable insights that directly informed product roadmap and feature prioritization

- Built analytics-ready RESTful APIs using Python FastAPI and MongoDB, developed real-time monitoring dashboards with **AWS** CloudWatch and CodePipeline for performance tracking

- Collaborated with engineering teams to instrument event tracking and API telemetry, reducing analytics ingestion latency and improving data quality and reliability across platforms

- Integrated internationalization (react-i18next) and **Figma**-based UI improvements, enabling measurement of feature adoption and engagement across global markets

- Pioneered end-to-end testing and cross-browser validation frameworks using Jest and Pytest, ensuring consistent data capture and reliable metrics collection

- Mentored junior developers in experiment design, statistical analysis, and data-conscious coding practices, fostering metrics-driven, growth-oriented team culture

- Drove rapid feature iteration using **Agile** methodologies with **Git**, NPM, and Jira, balancing development velocity with analytics-informed decision-making

Software Engineer, Accenture, India — Sep 2017 – May 2021

- Designed and developed **warehousing** and **order processing** modules for supply-chain management systems using Java application layers with mainframe backend integration and batch processing

- Built **Java** UI and service-layer components to capture inputs, enforce business rules, and orchestrate warehouse workflows including inventory receiving, put-away, picking, packing, shipping, and stock reconciliation.

- Developed order processing systems handling validation, allocation, fulfillment tracking, and exception management with backend integration via Java, **JDBC**, and **SQL**

- Provided on-call production support for critical warehouse and order-processing operations, ensuring 99.9% system availability and rapid incident response for systems processing 900K+ daily transactions

- Diagnosed and resolved production incidents including mainframe batch job failures, Java runtime errors, inventory discrepancies, and order failures by analyzing system logs, JCL, and SQL errors

- Collaborated with QA teams in Agile Scrum environment to reproduce defects, perform root cause analysis, and deliver stable fixes while participating in sprint planning and retrospectives

- Created and executed comprehensive test cases covering inventory movements, order lifecycle states, batch jobs, and exception scenarios, validating fixes through **SQL** queries and batch workloads

- Maintained technical documentation, operational runbooks, and version control following enterprise delivery standards and best practices

Education

M.S. in Computer Science (Specialization: Machine Learning),

George Mason University, Virginia, United States, Aug 2021 – May 2023, GPA: 3.7/4.0
Relevant Coursework: Analysis of Algorithms, Machine Learning, NLP

B.Tech. in Computer Science and Engineering, J

Jawaharlal Nehru Technological University, Hyderabad, India — Sep 2013 – May 2017,GPA: 3.6/4.0
Relevant Coursework: Data Structures, Software Engineering, Artificial Intelligence

Projects

LLM Knowledge Assistant

- Built enterprise LLM assistant integrating internal documents, communications, and knowledge bases.

- Implemented RAG pipelines with embeddings and vector search to improve answer relevance and grounding.

- Designed prompt orchestration workflows optimizing factual accuracy and user intent alignment.

Demand Forecasting / Time Series Modeling

- Designed a time-series Demand Forecasting engine leveraging SARIMA, Prophet, and LSTM to model seasonality and regional demand patterns. Deployed real-time prediction services and integrated forecasts into inventory optimization workflows

NLP-Based Insights from Unstructured Data

- Designed NLP pipelines to extract entities, classify documents, and summarize unstructured text using Transformers and spaCy. Deployed scalable inference services powering search, insights, and document intelligence across enterprise datasets.

Experimentation & Uplift Modeling

- Implemented A/B testing and uplift modeling frameworks to measure treatment impact on user behavior and business outcomes. Enabled data-driven decisioning for marketing, product features, and fraud/risk interventions.

End-to-End ML System with Deployment

- Engineered a production-grade ML platform covering data ingestion, feature engineering, model training, and real-time inference. Containerized and deployed models on AWS SageMaker with monitoring, CI/CD, and automated retraining pipelines.

Awards & Certifications

- AWS Developer Associate
- Accenture Celebration Excellence Award (2018)
- Won 3rd place in ScaleAI's Womxn GenAI Hackathon (2024)