Shiva Hari Gundeti

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Summary

Software Engineer with over 2 years of experience in Search and Data Platform teams. Proficient in Python and Java with an expertise in large-scale data management, building scalable backend systems, and training large models. Researcher in the realm of ML, deep learning, and NLP with expertise in finetuning LLMs, writing algorithms, and training models.

Technical Skills

- **Programming:** Python, Java, C++, HTML/CSS, Javascript, SQL, PySpark
- **Machine Learning:** PyTorch, Tensorflow, Scikit-learn, Matplotlib, Keras, Nltk, SpaCy, Hugging Face
- **Full Stack development:** Spring-Boot, Django, React, Typescript, Node.js, GIT, Docker, Kubernetes, CI/CD
- **Technologies:** Kafka, Flink, Neo4J,Airflow, Elasticsearch, Apache Spark, MongoDB, AWS S3, DynamoDB, Redis

Professional Experience

University of Utah Health [Jan'25 - Present]

Graduate Research Assistant

- Created a full stack application to visualize the **time series forecasts** of diseases with interactive geomaps using Plotly.
- Built **Kafka pipeline** that batches weekly data and triggers forecasting models **(Chronos, ARIMA, VAR, Transformer)**
- Integrated streaming data with historical database records for model training, storing predictions in **PostgreSQL**
- Deployed it on Google Cloud Run in a Dockerized environment, integrating automated CI/CD pipelines via GitHub Actions.
- **Technologies:-** Python, Django, React, PostgreSQL, Apache Kafka, Plotly, Darts

Seismograph stations, University of Utah [Feb'24 - Aug'24]

Student Research Assistant

- Trained **CNN and LSTM** models to perform spectrogram classification on mining signals and attained 95.8% accuracy
- Researched weight initialization techniques **(Xavier, He, Normal)** and activation functions to mitigate gradient problems.
- Improved the robustness by implementing **SWAG** algorithm and achieved a **97.3%** test accuracy on **CNN architecture**.
- Performed **Multi-SWAG Inference** using ensemble of **CNN, LeNet, and PreResNet** to improve on calibration plot.

Brane Enterprises [Jan'23-June'23]

Software Development Engineer 2

- **Data Indexing and Ingestion:-** Built **indexing service** to create **ETL pipelines** using **Apache Flink** to process and stream data in real-time to **Elasticsearch** resulting in highly available pipeline with a p99 latency of 178 milli seconds.
- **Search Analytics:-** Architectured **OLAP pipelines** with Kafka and Flink to capture user clicks to **AWS S3**. Integrated with **Apache Superset** using Athena plugins for dashboard analytics.
- Developed a POC to preprocess data to extract semantic words by training the **Word2Vec model** by the **Continuous Bag of Words (CBoW)** algorithm. Created **knowledge graphs** on Neo4J using similar words for semantic search.
- **Technologies:-** Python, Java, Spring-boot, AWS S3, Elasticsearch, Neo4J, Apache Flink, AWS Athena, Apache Superset

Brane Enterprises [April'21-Jan'23]

Software Development Engineer

- **E-Commerce based search:-** Developed search application supporting faceted search and typeaheads. Leveraged Elasticsearch to search 60M+ records with 80-180ms latency for multi-tenant, multi-language with user configurations.
- **Notifications:-** Developed Kafka notification system with **AWS SNS, SQS, and Airflow** for scheduled messaging handling 10k notifications per day.
- **Auditing and Metering:-** Implemented Aspect-Oriented Programming (AOP) to enhance REST APIs with auditing and metering, integrating with 50+ microservices and streaming API usage data via Kafka to Druid for real-time analytics.
- **Technologies:-** Java, Spring-boot, Apache Druid, Apache Kafka, MongoDB, Elasticsearch, Airflow

Education

University of Utah — Utah, USA

Master of Science in Computer Science - GPA: 3.95 *[Aug'23-May'25]*

Related Courses: *Graduate Algorithms, Deep Learning, Natural Language Processing, Manage Data with Machine Learning*

Indian Institute of Technology — Bhubaneswar, India

Bachelor of Technology - Electrical Engineering - GPA: 7.97 *[Jul'17-May'21]*

Projects

Query Intelligence on E-Commerce Search | *Apache Spark, PySpark, Solr, Docker* [Jan'24- April'24]

- Preprocessed user clicks data to perform product ranking. Captured relevant keywords from user logs and trained regression model to improve search scoring function. Used PySpark, SQL for data preprocessing and Solr for searching purposes.

Language Modelling from Scratch | *Pytorch, LLM, Transformer* [Jan'24-April'24]

- Developed a **encoder-only transformer** for text classification and a **decoder-only** model for **next word prediction** from scratch. Implemented vanilla and AliBi attention module and compared performance

Scholastic Achievements

- Ranked 27 in ACM Inter-collegiate Programming Contest**(ICPC)** Rocky Mountain Regional Contest [Nov'23]
- Ranked in the top **4 %** among 0.2 million candidates in JEE Advanced 2017 [May'17]
- Ranked in the top **1 %** among 1.5 million candidates in JEE Mains 2017 [April'17]