# Shiva Hari Gundeti

350S 200W, Salt Lake City, Utah 84101

(801) 634-8493 shivaharigundeti@gmail.com linkedin.com/in/gundetishivahari github.com/ShivaHariSonu

## Technical Skills

- **Languages:** Python, Java, C, C++, HTML/CSS, Javascript, SQL, Cypher, LaTeX
- **Data & ML Frameworks:** Spark, Flink, Airflow, PyTorch, Keras, Pandas, NumPy, SciPy, TensorFlow, Spring Boot, Hadoop, Hive
- **Web Technologies:** React, Nodejs, Typescript, Neo4J, PostgreSQL, Elasticsearch, Cassandra, NoSQL, MongoDB, AWS S3, DynamoDB, Redis, GIT
- **Cloud & Containerization Platforms:** Amazon Web Services, GCP, Microsoft Azure, Docker, Kubernetes, CI/CD, AWS SageMaker

## Scholastic Achievements

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

## Education

**University of Utah** Utah, USA

Master of Science in Computer Science - GPA: 3.90 *[Aug'23-May'25]*

***Courses:*** *Graduate Algorithms, Deep Learning, Computer Architecture, Manage Data with Machine Learning*

**Indian Institute of Technology** Bhubaneswar, India

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

***Courses:*** *Software Engineering, Software Testing and Verification, Introduction to Programming, Machine Learning and Data Analytics*

## Professional Experience

**Brane Enterprises Private Limited - Nslhub** [April'21-June'23]

*Software Development Engineer 2 (Data Platform Team)*

- **AI Powered Search:-** Created a search application with **Elasticsearch** that handles different schemas of E-commerce Search. Captures user signals for analytics, personalized search, and recommendations. Used **Neo4J** by creating Knowledge graphs for semantic search.
- **Batch Ingestion & Querying:-** Built indexing service that ingests records to **ElasticSearch** that increased throughput by **250** times using **Apache Flink**. Built a query service for arithmetic, searching and groupby on the data inserted. **Elasticsearch** handles simple queries and **Athena** on top of **AWS S3** for complicated ones.
- **Auditing and Metering:-** Worked on Aspect-Oriented Style of Programming (AOP) to create annotations for REST APIs to audit and do analysis on the data. Tech Stack Used:- **Druid**(columnar-store for OLAP operations), **Kafka**.
- **Notifications:-** Implemented the Push-Notification which handles 10K notifications per day and also searching functionality. Tech Stack Used:- **MongoDB**(with TTL index to expire messages) and **Kafka**
- **Database Migrations:-** Performed various database migrations from AWS DynamoDB to MongoDB, and from ElasticSearch to MongoDB, etc., handling different schema changes with backward and forward compatibility for different use cases.

**Chamber of Products** [April'20-June'20]

*Software Development Engineer Intern*

- **OAuth2 Authorization:-** Enhanced the login functionality with Bearer token-based authentication and enabled OAuth2-based authorization for Google sign-in support.
- **Cache Support:-** Enabled **Redis** to existing architecture for cache purposes. Used HashKey in **Redis** to store the data and improved the application performance.

## Positions of Responsibility

**Student Research Assistant** [Feb'24 - present]

*Seismograph stations, University of Utah*

- Trained models to produce automated event labels using 90-s event spectrograms from three component and single channel sensors.
- Used Convolutional and Recurrent Neural networks to accomplish above 98% percent accuracy in discriminating explosive and tectonic sources.

- Have built upon the existing CNN and LSTM based prediction with Stochastic Weight Averaging Guassian(SWAG) that improves the generalization in prediction and makes the model more robust.

### Grader [Aug'23 - Jan'24]
*Department of Mathematics, University of Utah*

- Graded the assignments, quizzes for Fall 23 in the Mathematics Department.
- Courses graded are :- Introduction to Statistical Inference (MATH 1070), Business Algebra (MATH 1090), Calculus-II (MATH 1220), Calculus-III (MATH 2210)

## Projects Undertaken

### Machine Learning Pipeline Scalability with Spark [Jan'24- Present]
*Manage Data with ML* *Course Project*

- Ingested the data, performed basic preprocessing and used **Spark** for feature engineering purposes.
- Trained the machine learning models with **MLlib** and build pipelines to reproduce it.
- Used Pytorch to scale the machine learning and its internal architecture.

### Multiclass Text Classification on Tweets [Aug'23-Dec'23]
*Deep Learning* *Course Project*

- Performed data preprocessing on the Tweet data by excluding irrelevant information, URLs, hashtags and categorised user sentiment as positive, negative and neutral.
- Trained the machine learning models of **Multinomial Naive Bayes, Gradient Boost Classifier, Random Forest Classifier** as a baseline and attained a test accuracy of 39.59%
- Improved accuracy by training deep learning models that capture sequence nature of text like **RNN, BiLSTM, and DistilBERT**.
- Performed Hyperparameter tuning and attained an accuray of 76.5% on the DistilBERT model.

### Searching and Analytical Operations —Backend [April'22]
*Self* *POC*

- Built APIs to allow importing csv and .xlsx files and ingesting the records in the database.
- Abstracted the querying operations for searching, sorting, groupbys and aggregations.
- Built the API's to download the results of the actions performed by the user.

### Stability Analysis of Polynomials in Control Theory [Aug'20- May'21]
*Guide Prof. Tarakanta Nayak, Department of Mathematics, IIT Bhubaneswar* *Bachelor's Project*

- Reviewed literature on **Hurwitz, Schur** stability of the polynomials in control theory.
- Researched on finding necessary conditions for the stability of segment $[P_1, P_2]$ for the given **Schur** stable polynomials $P_1(Z)$ and $P_2(Z)$.
- Implemented the algorithm in **MATLAB** and tested it with different coefficients of polynomials which are frequency independent.

### Robotic Arm Simulation [May'19-July'19]
*Guide Prof. Pandu Ranga, IIT Bhubaneswar* *Summer Project*

- Researched on Unity and basic mechanics of degrees of freedom of movements and motion calculation.
- Implemented a simulation model for the robotic arm in **Unity 3D**.
- The simulated model handles **3 translational** and **3 rotational** degrees of freedom.
- Written the code in **C#** for the movement of models at rotational joints based on the data from **Arduino**.

## MOOC Undertaken

- **Apache Kafka Series - Learn Apache Kafka for Beginners**
- **Java Multithreading, Concurrency & Performance Optimization**

## Extra Curricular Skills & Achievements

- Actively involved in **Technical Coding Club** and participated in competitions, and hackathons at the University of Utah
- Coordinated in the conduct of **Kalakrithi**, an annual art and craft exhibition, having a footfall of 10,000+
- Completed a two-semester course in **Extra Curriculars** conducted by Sports Council, IIT Bhubaneswar
- Worked as a coordinator for **E- Summit**, organised by IIT-Bhubaneswar with the aim to infuse entrepreneurship and promote innovation among students of the region.
- Managed logistics for talks and coordinated with guest speakers during **E-Summit**(Entrepreneurship Summit)
- Volunteered in the conduct of various events and activities in **Ashwamedha**, the **sports fest** of IIT Bhubaneswar