

# SHIVA HARI GUNDETI

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## TECHNICAL SKILLS

- **Languages:** Python, JAVA, C++, HTML/CSS, Javascript, SQL, Cypher,  $\text{\LaTeX}$
- **Frameworks & Libraries:** REST API, Spring-Boot, Pandas, Numpy, Scikit, Tensorflow, Keras, FastAI
- **Tools & IDEs:** GIT, Visual Studio, Postman, Jupyter Notebook
- **Operating Systems & Platforms:** Linux, Windows, AWS, Azure Cloud, Jira, Confluence
- **Databases:** Redis, Elasticsearch, Flink, Kafka, PostgreSQL, Cassandra, DynamoDB, Neo4j, MongoDB, HDFS

## 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

Master of Science in Computer Science - GPA: 3.90

Utah, USA

[Aug'23-May'25]

**Courses:** Graduate Algorithms, Deep Learning, Computer Architecture

### Indian Institute of Technology

Bachelor of Technology - Electrical Engineering - GPA: 7.97

Bhubaneswar, India

[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

### Grader

[Aug'23 - present]

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

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### 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.

### Image Categorization using Deep Learning

[Aug'23-Present]

*Course Project*

- Implemented a **two layer neural network** code from scratch to properly classify **CIFAR** dataset.
- Implemented Image Classification pipeline and applied K- Nearest Neighbor(**KNN**), Multiclass Support Vector Machine (**SVM**), **Softmax** and two layer neural net classifiers.
- Further improved the performance using **High-Level representations** of the image rather than the pixels.
- Performed Hyperparameter tuning, data masking and attained an accuracy of 60% on the 2-layer neural net.

### 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**.

### Reaction Timer Circuit

[Dec'18]

*Guide Prof. Debapratim Ghosh, IIT Bhubaneswar*

*Course Project*

- Implemented a reaction timer using **Astable Multivibrator**, Comparators, and other circuit elements
- Designed the clock having an accuracy of **0.1 sec** which stops as soon as the first quizzer presses the button
- Used a **7 segment display** to display the reaction time taken by the first quizzer as well as locked others

## MOOC UNDERTAKEN

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

## EXTRA CURRICULAR SKILLS & ACHIEVEMENTS

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- Actively involved in **Technical Coding Club** and participated in competitions, and hackathons at the University of Utah
- Involved in developing and deploying website for **Software Development Club** at the University of Utah
- Successfully completed **Machine Learning** workshops conducted by IIT Bhubaneswar.
- 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