

# AVISHEK DE

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## Education

### University of California, Santa Barbara

Sep. 2021–Mar. 2023(expected)

*Master of Science in Computer Science, Specialization in Systems*

*Santa Barbara, CA*

- Graduate Teaching Assistant : Fall 2021, Winter 2022, Spring 2022, Fall 2022
- Relevant Coursework: Runtime Systems, Information Retrieval and Web Search, Advanced Distributed Systems, Software Fuzzing for Correctness and Security, Computer Aided Reasoning for Software, Computer Science of Accelerator Design, Scalable Internet Services | **GPA: 3.9/4.0**

### Indian Institute of Technology (IIT), Roorkee

Jul. 2013–May 2017

*Bachelor of Technology in Electrical Engineering, Minor specialization in Computer Science*

*Roorkee, India*

- Relevant Coursework: Discrete Structures, Data Structures, Operating Systems, Design & Analysis of Algorithms, Database Management Systems, Theory of Computation, Artificial Neural Networks | **GPA: 8.9/10**

## Experience

### Meta (formerly Facebook, Inc.)

Jun. 2022–Sep. 2022

*Software Engineering Intern, Privacy Risk Mitigation Infra*

*Menlo Park, CA*

- Developed a framework to **identify**, **ingest** and provide **actionable mitigation** for privacy bad practice instances across Meta products in terms of code and data asset attribution for **RoPA(GDPR)** compliance.
- Migrated the bad practice identification platform from **Presto** queries on **Hive** to the **Ent/Laser** framework to increase data ingestion throughput.
- Implemented automated cross platform (**Hack to Python**) diff generation using the **LibCST** framework to reduce development time by 1 engineer-day per privacy issue.

### Goldman Sachs

Jun. 2017–Aug. 2021

*Associate (Software Developer), Risk Division*

*Bengaluru, India*

- Developed an autonomous engine to dynamically reconfigure memory and CPU parameters of public cloud hosts based on temporal resource demand, improving utilization and calculation throughput by **35%**.
- Developed a job-packing algorithm to reliably predict resource requirements leveraging historical data and building an in-memory cache using **Redis** to reduce total compute bill by **25%** for Risk division.
- Developed a job distribution framework based on microservices architecture using **Kafka**, **MongoDB** and in-house graph databases to publish pricing jobs on the public cloud calculating multiple risk metrics for more than **4 million** trade positions daily.
- Saved **\$50 million** for the firm annually by improving risk models to reduce pricing time of a portfolio.
- Developed a framework to dynamically request pre-emptible GCP compute based on resource requirements, reducing dependency on reserved cloud capacity and decreasing overall compute bill by **7%**.

### HealthOnRent.com

May 2016–Jul. 2016

*Software Development Intern*

*Mumbai, India*

- Built an online store for an entry-level healthcare startup using the **WooCommerce** platform, getting them business-ready from scratch in 1.5 months and increasing direct sales by **200%**.
- Developed a customized enterprise resource planning (ERP) suite to handle order management, inventory and logistics for their unique rentals-based products and services saving **\$600** annually.

## Publications

- Classification of Extension and Flexion Positions of Thumb, Index and Middle Fingers Using EEG Signal**  
6th IEEE International Conference on Control Systems, Computing and Engineering-2016 ([PDF](#))

## Key Projects

### Group Messaging Application based on Distributed Consensus Protocol | *Java, RAFT* Feb. 2022–Mar. 2022

- Developed a messaging application which supports **RAFT** design patterns including leader election and normal operation. Supported features include creating user groups, modifying groups based on edit/delete operations, sending and receiving messages which are encrypted by DSA, handling local faults on multiple hosts and network outages while ensuring consistency of state.

### Facial Recognition System for Attendance Recording | *Python, dlib, OpenCV*

Sep. 2016–Apr. 2017

- Built an automated attendance recording system using the **OpenFace** framework proposed by Amos et al. We detected facial landmarks using **dlib** and preprocessed the images with **OpenCV**. Feature extraction was done using **CNN**.

## Languages and Technologies

- Hack, Java, Python, C++, Scala, SQL, Node.JS, Ruby, JavaScript/React, Securities Language (SLANG)
- GraphQL, Kafka, MongoDB, Cassandra, Elasticsearch, Spark, Redis, AWS, Ruby on Rails