

Shounak Dey

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EXPERIENCE

Goldman Sachs

Bangalore, India

Associate, GS Bank Engineering

Jan 2023 – Present, Full-time

- Working on developing and maintaining the Bank's real-time regulatory control infrastructure for Regulation W
- Designed and built new systems that can consume, enrich, and process up to a million messages daily and identify similar messages over a 24-hour window in real-time. Implemented real-time lookups using Kafka's stream table join functionality. Leveraged Reactive Kafka, Springboot, Mongo and Apache to build the system
- Part of a Design Review group that meets weekly to review new features being implemented by our team

Analyst, GS Bank Engineering

July 2020 – Dec 2022, Full-time

Seasonal Analyst, GS Bank Engineering

Jan 2020 – Jun 2020, Internship

- Worked on improving and maintaining a central infrastructure to pledge assets to the FED Discount Window and Federal Home Loan Banks
- Developed and maintained systems that process approximately 12 million loans or positions daily, generate reports, and create dashboards for users that participate in pledge
- Reduced the processing time for a batch that processes over 10 million rows of data daily from over 2 hours to under 10 minutes allowing the users to access the data quicker
- Worked on systems that process multiple sources of financial data, compute the impact of the data consumed, and generate reports and dashboards for the users
- Helped set up new projects and migrate a few older projects to Kubernetes to formalize plans to move to the cloud-based deployments

Summer Analyst, HCM Quick Wins

May 2019 – Jul 2019, Internship

- Designed and built a new system for the HCM team in the Paris office to automate the process of vacation accrual according to the French Holiday laws
- Used technologies like Java, Dropwizard, DB2 and Angular to build the solution

SRM University

Chennai, India

Research Intern

May 2018 – July 2018, Internship

- Worked with [Dr. Shubhabrata Datta](#) to build a model to classify Scanning Electron Microscope images of Martensite phases under different combinations of heat treatment and temperatures which were Inter-critical Annealing, Intermediate Quenching, and Step Quenching
- Used multiple techniques of pre-processing like image augmentation and histogram equalization using the Contrast Limited Adaptive Histogram Equalisation method
- Used a modified version of the VGG-16 model to classify the images. Applied methods like Dropout and ReLU activation functions to introduce non-linearity in the model and used Adaptive Moment Estimation to compute and modify the learning rates of each parameter
- Trained the model on a dataset of 5400 images achieving an average accuracy rate of 96.1%

SKILLS

Languages: C/C++, Java, Python, JavaScript, TypeScript, SQL, Bash

Technologies: SpringBoot, Agile, Angular, React.js, MySQL, MongoDB, Git, Kubernetes, Kafka

EDUCATION

Georgia Institute of Technology

Manipal, India

Master of Science in Computer Science

Aug 2024 – Present

Minor in Interactive Intelligence

Manipal Institute of Technology

Manipal, India

B.Tech in Computer Science and Engineering; **GPA: 8.25/10.00**

Sep 2016 – Jun 2020

Minor in Computational Mathematics

LEADERSHIP & ACHIEVEMENTS

Technical Head, IECSE: Managed the technical operations of the official CS club of MIT, Manipal with over 3000 members. Conducted various technical workshops, competitions, and events in domains like Algorithms and Computation, to promote technical knowledge and build an atmosphere of curiosity towards programming on campus.

ACM-ICPC Kharagpur, 2018: Ranked 36th in the onsite Kharagpur Regionals

ACM-ICPC Kolkata, 2018: Ranked 46th in the onsite Kolkata Regionals

PROJECTS

Parallelized Monte Carlo Ray Tracer | [Github](#)

- Worked on parallelizing a Monte Carlo Ray Tracer using technologies like Message Passing Interface(MPI) and CUDA to explore optimizations
- Added support for multiple types of materials, namely Lambertian/Diffuse materials, Metals and Dielectrics (eg. Glass)
- Used concepts like Bounding Volume Hierarchy to optimize ray-object collision computation
- Achieved a speedup of almost 3x using Message Passing Interface when generating a 3D image containing more than 1000 objects

Hospital Management System | [Github](#)

- Made a Hospital Administration Portal, a tool which can help hospital administration and doctors keep track of patients, wards, admissions and discharges, billing, etc
- Used Node.js, Express.js for back-end operations, EJS as a templating engine, and Redis as a database technology. Implemented session management, authentication, and authorization features to segregate accesses between administrators, doctors, and staff