

Saksham Goel

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Education

The University of Texas at Austin

MS IN COMPUTER SCIENCE | FULLY-FUNDED RESEARCH ASSISTANTSHIP
Verification of Distributed Systems, Advanced OS, Datacenters

GPA : 4.0 / 4.0

Aug 2021 - May 2023

IIT Bombay

B.TECH. IN COMPUTER SCIENCE AND ENGINEERING (HONS.) | MINOR IN APPLIED STATISTICS
Virtualization, Verification of Concurrent Programs, Haskell

GPA: 9.59 / 10

Jul 2017 - May 2021

Industry Experience

Netflix

SOFTWARE DEVELOPER INTERN

Los Gatos, California

May 2022 - Aug 2022

- Developed and evangelized features to reduce peak load, designed an MVP for low-latency workers to reduce p99 launch time by 90%, and improved CRDB transactional throughput by 2x for distributed semaphores in Netflix's big data workflow orchestrator.

Tech Stack: Java, Spring Boot, Redis, Cockroach DB

Mosaic Research Capital

QUANTITATIVE DEVELOPER INTERN

Hong Kong (Remote)

May 2021 - Aug 2021

- Developed highly concurrent low-latency infrastructure for high-frequency trading in crypto exchanges by market-making algorithms. Led an overhaul of the order management system, bringing down the tick-to-order latency by **20%**.
- Modularized a monolith into gateway, market data parsing, and trading strategy components.

Tech Stack: C++ 17, Aeron Transport, Linux perf, Shared Memory

Uber

SOFTWARE DEVELOPER INTERN

Bangalore, India

May 2020 - Jul 2020

- Full-stack development to build an MVP of a scalable survey platform. Authored an **RFC** of a system that provides synchronous client experience over an asynchronous backend achieving **millisecond latency** SLA guarantees. **Used in production** as of Dec 2020.

Tech Stack: Go, Kafka, Schemaless, WebSocket, HiveQL

AWL Inc.

SOFTWARE DEVELOPER INTERN

Sapporo, Hokkaido, Japan

Nov 2019 - Jan 2020

- Developed microservices and deployed DNN models on an ARM-based ASIC edge device to provide AI capabilities to conventional Video Management Systems. This work was showcased in the **CES 2020**.

Tech Stack: C++, RabbitMQ, OpenVINO, Azure IoT Framework

Publications

ISMM 2020 **Garbage Collection using a Finite Liveness Domain**, A. Bansal*, S. Goel*, P. Shah*, A. Sanyal, P. Kumar

SPIE 2020 **WeLineation: Crowdsourcing Segmentations for Ground Truth Estimation**, S. Goel, Y. Sharma, M. Jauer, T. Deserno

Research Experience

Abstraction Based Translation Validation

UNDERGRADUATE RESEARCHER (UNDER PROF. SUPRATIK CHAKRABORTY)

IIT Bombay, India

2020 - 2021

- Translation validation for **GCC's** tree passes (**GIMPLE**) by simulation relations, dataflow analyses, and SMT solvers.

Liveness Based Garbage Collection

UNDERGRADUATE RESEARCHER (UNDER PROF. AMITABHA SANYAL)

IIT Bombay, India

2018 - 2020

- Designed a **liveness analysis** based garbage collection technique for functional languages that showed **10x gains** in speed & memory on standard benchmark suites.
- Published and presented as the opening talk of the virtual ACM SIGPLAN **ISMM'20 conference** (co-located with PLDI'20)

TU Braunschweig

RESEARCH INTERN (UNDER PROF. THOMAS DESERNO)

Braunschweig, Germany

May 2019 - Jul 2019

- Designed expectation maximization algorithms and developed a system to crowdsource reliable medical image segmentations. This was used by 200+ volunteers to generate 5000+ masks. Published in the SPIE Medical Imaging Conference 2020.

Honors & Awards

2021 **J N Tata Scholar**, for pursuing higher education in computer science

India

2020 **Institute Academic Award**, for excellent academic performance (Top 7 out of 121)

IIT Bombay

2020 **Undergraduate Research Award**, for exceptional research work and publication

IIT Bombay

2017 **All India Rank 25 in JEE Advanced**, amongst more than 1 million candidates

India

2015 **National Talent Scholar**, a scholarship by NCERT, Government of India (Top 1000 out of 1 million+)

India

Teaching

Undergraduate Operating Systems, Teaching Assistant UNDER PROF. MYTHILI VUTUKURU

Fall 2020, IIT Bombay

Undergraduate Calculus, Teaching Assistant UNDER PROF. SHRIPAD GARGE

Fall 2018, IIT Bombay