# Sagar Abhyankar

Urbana-Champaign, Illinois



in Sagar Abhyankar | ⊕ Portfolio | ♠ Sagar A | ► sagarabhyankar 18@gmail.com

#### EDUCATION

## Master of Computer Science

Aug 2024 - **Dec 2025** (Expected)

University of Illinois at Urbana-Champaign

Course Assistant for CS222

Relevant Coursework: CS 411 Databases, CS 440 AI, CS 425 Distributed Systems

Bachelor of Engineering - Computer Engineering

July 2020 - June 2024

Pune Institute of Computer Technology

CGPA: 9.38

Relevant Coursework: Theory of Computation, Data Structures and Algorithms, Artificial Intelligence, Distributed systems, Computer Networks and Security, Cyber Security and Digital Forensics

Internships

Mastercard

Pune, Maharashtra, India

Software Development Intern — Security Operations Centre

May 2023 - Jul **2023** 

- Developed a Distributed Scalable Rapid Incident Response System reducing the response time from days to minutes.
- Built an automated tool arsenal for analyzing Forensic Artefacts, saving SOCIR dept. 2000+ hours yearly
- Implemented with **Kubernetes**, **Docker** Apache Spark, Node.js and **bash**.

Bajaj Finserv

Pune, Maharashtra, India

Software Development Intern

March 2023 - May **2023** 

- Created a Cryptocoin eco-system called Bajaj Coin using on premise linux nodes.
- Setup distributed private blockchain network using go-ethereum, along with a compliance backup database.

### Reverie Language Technologies

Bengaluru, Karnataka, India

AI Researcher

Aug 2023 - Mar **2024** 

- R&D of real time state-of-the-art noise cancellation software using deep learning for Indic
- Curated Datasets, trained large models with novel architectures, the carried out research won at PICT's InC'24 national hackathon.

#### Newton's Apple - A cyber security startup

Pune, Maharashtra, India

**Lead** Security Software Development Intern

Aug 2023 - Feb 2024

- Developed and Deployed the flagship line-up of cyber security products and services.
- Includes tools such as Phishing Simulators, Vulnerability Assessment and Penetration Testing. Configured on premise servers for Tata Technologies.
- The product included cost efficient interfacing with AWS EC2 and SES

## PyBots LLC - An automation startup

Bengaluru, Karnataka, India

Software Engineering Intern

Feb 2022 - Jan 2023

- Built the entire feature-rich flagship desktop application used by 100's of customers for automating workloads.
- Developed **comprehensive unit tests** and documentation (15k LOC).
- Developed **RPA technologies** for nextgen healthcare (client)
- Implemented Secure app state manager, auth tokens, backend database consistency and a sandbox for automation scripts.

#### Pustakwaale - A bookstore on wheels

Software Engineering Intern - Analytics Team

Pune, Maharashtra, India Jan 2022 - May 2022

- Analyzed historical visitor data to **identify trends**.
- Developed AI-driven scheduling algorithms for exhibition bookings across Pune.
- Achieved up to 8% month-over-month profit growth through optimized scheduling.
- Prioritized pop-up locations based on 100's of quantitative real-world metrics.

## LANGUAGES, TOOLS AND FRAMEWORKS

• C/C++, Python, Javascript, Java, Go, .NET, React, Linux, Git, Flutter, Electron, Next.js, AWS, Docker, Kubernetes, MongoDB, MySQL, DynamoDB, PostgreSQL, Firebase, Django and more.

### PROJECTS

### High throughput Distributed System

Aug 2024 - Present

- Building a Distributed system for CS 425 from scratch in Go using sockets, tested on a 10VM cluster.
- Implemented Data Sharding, SWIM protocol, Fault tolerance, Gossip Infection Mechanisms, and extensive unit testing.

Smart India Hackathon 2022 | Runner's Up | 😱 link

Jul 2022 - August 2022

- Served as the **team's technical head**, developed server-less architecture using **AWS lambda and AWS API gateway** to upload the images capable of handling around **1000+ requests per second**.
- Built a fully functional mobile application using **flutter** for image uploading life cycle and light weight image quality enhancer on the server which runs on **canny edge detection** with added customization.

Rusty Vault | 🞧 link

Jul 2023 - Aug 2023

- A highly secure, simple to use and fast local password manager desktop app written using Rust
- Uses sound cryptographic security fundamentals to safeguard against bruteforce attacks

Beluga Interpreter | 🞧 link

Jan 2023 - Feb 2023

- Designed an esoteric language to directly interpret and run turing machines with standard TM notation as syntax
- Written in **pure** C++, supports features for combining multiple infinite tape turing machines

## Delibay DBMS | 🕝 link

Feb 2023 - Mar 2023

- Modeled a database for a comprehensive and **complex delivery network**.
- The application was developed using Nextron, Amazon RDS, MySQL.

### RESEARCH EXPERIENCE

- Exploring Speech Enhancement Models for Indic Language in Noisy Environments: A Benchmarking Study

  \*\*Complete, Unpublished\*\*
- $\bullet$  A Survey on Enhancing Deep Learning Based Speech Recognition Systems using Noise Suppression Techniques Published
- Performance Analysis of Reinforcement Learning Algorithms on mitigation of Forest

  Fires

  Complete, Unpublished

\* Built an environment using Mujoco-world gen/cellular automata and trained AI agents using different reinforcement learning algorithms to analyze performance of subduing wildfires.

• Integration of logical features with neural networks for controlled vs uncontrolled fire classification: a comparative study

Published

- \* Indian Journal Of Computer Science And Engineering Volume 14 Issue 4,2023
- Homomorphic Encryption for privacy preserving machine learning

Ongoing

\* Experimenting with Microsoft's SEAL and PySyft for evaluating performance on different ML models

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