

Siddhant Kulkarni

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Education

B.E. Computer Science with a Minor in Data Science,

Oct 2021 – Aug 2025

Birla Institute of Technology and Science, Pilani

CGPA: 9.23

Institute **Merit Scholarship** Awardee - tuition fee waiver for excellent academic performance (**top 3%**)

Relevant Coursework: Operating Systems, Computer Networks, Network Programming, Compiler Construction, Database Systems, Object Oriented Programming, Machine Learning, Foundations of Data Science, Probability and Statistics, Linear Algebra

Professional Experience

Atlassian, Software Engineer Intern 📄

Jun 2024 – present

- Developed a **Java Spring Boot RESTful API** to retrieve repository data and **Software Bill of Materials (SBOM)**, enabling insights into **end-of-life dependencies, licensing, and compliance** issues
- Implemented **React**-based interfaces for dynamic SBOM visualization

Jio Platforms, Summer Intern 📄

May 2023 – Jul 2023

- Part of **Jio Engage** 📄 worked on developing models to create **face filters** to **boost user engagement**
- Implemented various **semantic segmentation** models for hair segmentation using **PyTorch** and **Keras**
- Integrated the hair segmentation model with a **face detection** pipeline to create a **segmentation mask** of hair, achieving a **98% pixel accuracy** and a **91% mean IOU**

Research Experience

Data, Systems and High Performance Computing Lab

Nov 2023 – present

- Working under the guidance of *Dr. Arnab K. Paul* 📄 on the **mutability of Ethereum smart contracts** post-deployment using the **EIP-2535 Diamond Standard** while ensuring the preservation of trust within the system
- Compared **performance** of **mutable** and **immutable** smart contracts for **gas** and **system** metrics
- Setup a multi-client **proof-of-stake** Ethereum testnet and monitored metrics using **Prometheus** and **Grafana**

Improving Adversarial Attacks using Membership Inference

Aug 2023 – present

- Exploring various **membership inference attacks** how they can be leveraged to enhance **adversarial attacks** under the guidance of *Dr. Hemant Rathore* 📄
- Investigated and proposed **countermeasures**, assessing **feasibility** and **performance**

Awards

Vimarsh 5G Hackathon Winner,

Bureau of Police Research and Development, Ministry of Home Affairs, Department of Telecom and TCoE-India

- Awarded first place in a **national hackathon** 📄 focused on addressing the needs of law enforcement agencies
- Developed a winning solution for the problem statement '**Secure Routing Framework for a 5G Private Network**', won a prize of **Rs. 1,50,000**

Projects

Formal Verification for Rust Ported Codebases

- Explored **formal verification** methods for **memory safety** and **functional correctness** in ported **Rust** and **C** code
- Utilized **KLEE** and **Kani** Rust verifier to verify various properties of C and Rust code, respectively

Tetris Game Programming Language

- Developed a custom game programming language for Tetris in **Python**, utilizing **flex** for lexical analysis and **bison** for syntax parsing to facilitate advanced **game customization** and **functionality**

Extracurriculars

Competitive Programming, Specialist on Codeforces 📄

Nirmaan Organization, Core Member 📄

- Part of Project Shiksha, helped prepare students from nearby underprivileged areas for the JNVST scholarship exam
- Took an active part in teaching and mentoring over 20 students, 2 of whom successfully cleared the exam