# DHRUV SOMANI

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## EDUCATION

**Indian Institute of Technology, Guwahati**                          *2020 - Expected 2024*
B. Tech. in Computer Science and Engineering                                    CPI: 9.14/10
Minor in Robotics and Artificial Intelligence
**Key Courses**: Design and Analysis of Algorithms, Probability Theory and Random Processes, Game Theory and Economics, Operating Systems, Computer Networks, DBMS, Machine Learning
**Awarded 6** AS **"Outstanding" grades** for exceptional performances in courses including Software Engineering, Computing Lab, (Mathematical) Optimization and Computational Number Theory and Cryptography usually given to the top 1% of the batch.

## EXPERIENCE

**Systems Intern**                                                      *May - July 2023*
Quadeye Securities LLP                                                          *C++*
- Developed an exhaustive testing tool for different order-related scenarios as a state-machine simulator.
- Developed a mock live exchange with a protocol-agnostic architecture enabling seamless integration with multiple communication protocols to ensure faultless operation of the internal API.
- Conducted comprehensive code benchmarking, identified bottlenecks and optimized the codebase to reduce latency and enhance overall performance significantly.

**Web Developer**                                                      *June 2021 - March 2023*
Students' Web Committee, IIT Guwahati                          *Python, Django, SQL, JavaScript*
- Developed the hostel application portal in Django to digitize the hostel application and allotment process of the institute, which 2500+ students and the administrative body have used.
- Wrote the major portion of the backend of the website with special emphasis on writing reusable code.
- Acted as the point of contact with the Hostel Affairs Board to understand their requirements and issues.

**Software Engineer**                                                  *October - December 2018*
Google Code-in                                                                  *Python*
- Selected as a **finalist** out of 3000+ programmers for exceptional contributions to open-source software.
- Worked in a collaborative environment and contributed to coala - a language analysis toolkit.
- Added multiple features such as template autogeneration for a static web-server, recursive directory traversal for command-line utilities, unit tests and improved overall code quality.

## HONORS AND AWARDS

- Represented India and won the **Bronze Medal** at the **Asia-Pacific Informatics Olympiad**, 2018.
- Ranked in the national top 30 with a perfect score in the Indian National Olympiad in Informatics in 2018 and 2019, and was invited to attend the International Olympiad in Informatics Training Camp twice. Ranked $8^{th}$ at IOITC 2019.
- Selected as a **Reliance Foundation Scholar** in **AI** and **CS**, 2020.
- Secured the $\mathbf{26^{th}}$ Rank at the **ICPC** Amritapuri Regionals, 2021.
- Among the top 30 in the Regional Mathematical Olympiad and was selected to take the Indian National Mathematics Olympiad, twice.
- Secured the $\mathbf{1^{st}}$ **position** at the Pi Quiz Nationals based on trading, game theory and economics organized at the **Indian Institute of Management Indore**.
- Classified as a **Master** on Codeforces with a maximum rating of 2186.
- Global Ranks 27, 43 & 77, Google Kick Start, 2021

## TECHNICAL SKILLS

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|---|---|
| **Programming Languages** | C, C++, Python, MATLAB |
| **Data Science** | pandas, NumPy, matplotlib, scikit-learn |
| **Development** | Django, MySQL, HTML, CSS, JavaScript |

## KEY PROJECTS

**Competition Management System** *Python, Tkinter, Django, SQL, JavaScript*

- Successfully developed and deployed a competition management system in Python with a user-friendly Tkinter GUI and SQLite integration to manage participants, teams and scores.
- Also created a Django project to host the real-time leaderboard online.

**Sliding Puzzle Solver** *C++*

- Developed an 8-sliding puzzle solver using an A* best-first search algorithm.
- Analyzed and experimented with many heuristic functions with various parameters and features to find an optimal one.