

# PARTH KOHLI

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## EDUCATION

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**Indian Institute of Technology Roorkee**  
**Applied Mathematics**  
Integrated Master of Science

*July 2017 - Present*  
**CGPA: 9.46/10.00**  
Department Rank 2

## EXPERIENCE

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**Product Engineer Intern, Sprinklr**

*May '21 - Jul '21 (2 months)*

- Worked on the social media listening and search infrastructure in the Research team
- Introduced new categories of queries based on part-of-speech tags using OpenNLP on Sprinklr's search engine built on Apache Lucene
- Evaluated and enhanced the search pipeline to optimise the performance of searching and indexing on a large corpus (500M+ new entries/day)

**Software Engineering Intern, Shipsy**

*June '20 - July '20 (1 month)*

- Developed a bot to manage the entire company's KPI and development workflow: synchronising data across platforms - Slack, JIRA and BitBucket and generating insights, eliminating manual grunt work in the company-wide developer workflow
- Learned interacting with databases and servers through APIs and client libraries, dealing with design decisions, writing high-quality production code, the Git flow and the Agile development cycle

## TECHNICAL STRENGTHS

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**Competitive Programming**  
**Programming Languages**  
**Areas of Interest**

Codeforces: [2195](#) — CodeChef: [2331](#) — AtCoder: [2022](#)  
C++ — Python — Java — Haskell  
Algorithms — FP — Formal Verification

## ACHIEVEMENTS & POSITIONS OF RESPONSIBILITY

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**ICPC 2019 Amritapuri Onsite Regionals:** [Rank 27](#)

*December 2019*

**ICPC 2018 Amritapuri Onsite Regionals:** [Rank 36](#)

*December 2018*

**Programming and Algorithms Group, SDS, IIT Roorkee**

*January '18 - Present*

- Competed in 150+ programming and math contests, both onsite (ICPC) and online (Codeforces, CodeChef, AtCoder) - secured single-digit global ranks in multiple contests.
- Mentoring 25+ junior members in competitive programming
- Organise and conduct lectures and practice contests on Erdos and Codevillage, the competition platforms managed by PAG and SDS Labs.

**Additional Positions of Responsibility**

- Member at **Quizzing Section**, IIT Roorkee (October 2017 - Present)
- Mentor at **Student Mentorship Program**, IIT Roorkee (2020-21)
- Member, **NSS Editorial Cell** (2017-18)

## COURSEWORK AND ACADEMIC PROJECTS

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Numerical Analysis — Theory of Computation — Optimization — Stochastic Processes — Statistical Inference — Discrete Mathematics — Evolutionary Algorithms — Data Structures — Mathematical Modelling

**Automated Theorem Proving**

*Autumn 2021*

Implemented a system in Lean 4 and Coq (interactive theorem provers) for an axiomatic treatment of number systems and logic in a type-theoretic sense; this is a first-principles treatment of many programming and mathematical concepts such as functional programming, type theory, category theory, first-order logic

**Computational Algebra**

*Spring 2020*

Built a minimal computer algebra system in Python that solves the SAT problem by fast computation of Gr bner bases; this was also useful for proving geometric theorems by encoding geometric entities and statements as polynomials and reducing proofs to ideal-membership