

# Anubhav Dhar

## IIT Kharagpur

### Curriculum Vitae

Date of Birth : 28th November, 2001  
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## BASIC INFORMATION

- **Current Affiliation** : Indian Institute of Technology (IIT) Kharagpur
- **Department** : Computer Science and Engineering (CSE)
- **Enrolled Course** : 5-Year Integrated Bachelor and Master of Technology (2020-2025)

## EDUCATION

- **Integrated Bachelor and Master of Technology (Dual Degree)** 2020-2025 (expected)  
Computer Science and Engineering Language of Instruction: English  
Indian Institute of Technology (IIT) Kharagpur, Kharagpur, India  
Cumulative GPA (first nine semesters): **9.91/10** Department Rank: **1**
- **Higher Secondary Education** 2018-2020  
Hijli High School, Kharagpur, India Language of Instruction: English  
Percentage: **98.00%** Rank: **1** in school, **10** in the state (West Bengal)
- **Secondary Education** 2013-2018  
Hijli High School, Kharagpur, India Language of Instruction: English  
Percentage: **95.71%** Rank: **1** in school, **20** in the state (West Bengal)

## PUBLICATIONS

- Anubhav Dhar, Soumita Hait, Sudeshna Kolay: “**Efficient Algorithms for Euclidean Steiner Minimal Tree on Near-Convex Terminal Sets**”. *The 34th International Symposium on Algorithms and Computation (ISAAC 2023)*, pp. 25:1–25:17.  
Link: <https://doi.org/10.4230/LIPIcs.ISAAC.2023.25>
- Anubhav Dhar, Eli Kujawa, Henrik Lievonon, Augusto Modanese, Mikail Muftuoglu, Jan Studený, Jukka Suomela: “**Local problems in trees across a wide range of distributed models**”. accepted and to appear in *The 28th International Conference on Principles of Distributed Systems (OPODIS 2024)*.  
Link (arXiv): <https://doi.org/10.48550/arXiv.2409.13795>

## MANUSCRIPTS

- Anubhav Dhar, Subham Ghosh, Sudeshna Kolay: “**Efficient Exact Algorithms for Minimum Covering of Orthogonal Polygons with Squares**”. *ArXiv Preprint – July 2024*.  
Link (arXiv): <https://doi.org/10.48550/arXiv.2407.02658>

## INTERNSHIPS

- **Research Assistant, Distributed Algorithms Group** May 2024 – July 2024  
**Aalto University, Espoo, Finland** Supervisor: Prof. Jukka Suomela
  - Deduced the asymptotic equivalence in the locality of *locally checkable labeling* (LCL) problems on *rooted regular trees* for various classical and quantum variants of the LOCAL model of distributed computing.
- **Summer@EPFL Intern, Processor Architecture Laboratory (LAP)** May 2023 – July 2023  
**EPFL, Lausanne, Switzerland** Supervisor: Prof. Paolo Ienne
  - Investigated the opensource software *OpenFPGA* (used for designing, implementing and analyzing customizable *FPGA* architecture). Implemented support for *physical blocks* having arbitrary functionality, enabling the design of *Coarse Grain Reconfigurable Architecture*.

## AWARDS AND ACHIEVEMENTS

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### • Academic:

- *Current Department Rank 1* amongst 70 students in *CSE, IIT Kharagpur*
- **Senior Scholar**, *Jagadish Bose National Science Talent Search (JBNSTS) scholarship*
- *All India Rank 489* in *JEE Advanced, 2020* amongst ~150,000 shortlisted candidates
- *All India Rank 126* in *KVPY SA, 2018* amongst ~100,000 candidates
- *All India Rank 381* in *KVPY SX, 2019* amongst ~150,000 candidates
- *Rank 12* in *West Bengal Joint Entrance Examination 2020* amongst ~120,000 candidates
- *Rank 10* in *Higher Secondary Examination, 2020*, amongst ~760,000 candidates;  
*Felicited by the Government of West Bengal for this rank*

### • Competitive Programming:

- **‘Master’** at *Codeforces* (rating: **2189**) and **‘6-star coder’** in *Codechef* (rating: **2218**)
- **Regionalist** in *ICPC 2023*; rank **10** in *Amritapuri Regionals* and **7** in *Chennai Regionals*
- **Regionalist** in *ICPC 2020*; rank **35** in *Amritapuri Regionals* and **80** in *Gwalior Regionals*
- Secured **12th Position** in *ICPC 2023, Online Preliminary Round, India*
- Secured **2nd Position** in *ICPC for Schools 2019, Amritapuri Regionals*
- Qualified for **Round 3**, *Google Code Jam 2021*; round 2 ranks: **418** (global), **5** (country)
- Qualified for **Round 3**, *Google Code Jam 2022*; round 2 ranks: **658** (global), **7** (country)
- *Facebook Hackercup 2021*: round 2 global rank **395** (among 34584, advanced to **round 3**)
- *Facebook Hackercup 2022*: round 2 global rank **749** (among 27604)
- *Facebook Hackercup 2024*: round 2 global rank **929** (among 22494)
- Best Global Ranks in **Google Kick Start** include **178** (*2022 Round C*, among 12425), **109** (*2021 Round A*, among 19841) and **325** (*2020 Round D*, among 11704)

### • Olympiads:

- Qualified **Indian National Olympiad in Informatics (INOI)** and selected for **International Olympiad in Informatics Training Camp (IOITC)** of India, in **2019 & 2020**
- **Indian National Mathematics Olympiad (INMO) Merit Awardee** of the year **2019**
- Qualified for the **Indian National Mathematics Olympiad (INMO)** in **2018, 2019 & 2020**
- Qualified for the **Indian National Astronomy Olympiad (INAO)** in **2019 & 2020**
- Qualified for the **Indian National Chemistry Olympiad (INChO)**, in **2020**
- **Gold Medalist, Mathematics Olympiad 2024, General Championships, IIT Kharagpur**

## COURSEWORK INFORMATION

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- **Theoretical Computer Science:** Parameterized Algorithms, Advanced Graph Theory, Algorithmic Game Theory, Approximation & Online Algorithms, Computational Geometry, Randomized Algorithm Design, Selected Topics in Algorithms, Parallel Algorithms, Computational Number Theory<sup>†</sup>, Algorithms-II, Formal Language & Automata Theory, Algorithms-I\*, Discrete Structures, Foundations of Cryptography, Cryptographic Protocol Theory<sup>†</sup>, Statistical Learning Theory, Cryptography & Network Security.
- **Mathematics:** Advanced Calculus, Linear Algebra, Numerical & Complex Analysis, Probability & Statistics, Operations Research.
- **Other courses in Computer Science:** Switching Circuits & Logic Design\*, Compilers\*, Machine Learning, Advanced Machine Learning, Artificial Intelligence, Systems Programming Laboratory, Computer Networks, Operating Systems\*, Programming & Data Structures\*, Computer Organisation & Architecture\*, High Performance Computer Architecture, Software Engineering\*.
- **Other courses:** Basic Electronics\*, Signals & Systems, Physics of Waves\*, Electrical Technology, DIY Laboratory, Science of Living Systems, Cell and Molecular Biology, Chemistry\*, Economics, Engineering Drawing\*, Basic Engineering Mechanics, Engineering Laboratory, Environmental Science, English for Communication\*.

\* marked courses include laboratory component as well

† marked courses are ongoing courses of Spring 2025

## OTHER ACTIVITIES, ACADEMIC DUTIES & POSITIONS OF RESPONSIBILITY HELD

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- **Teaching Assistant**, *Approximation Algorithms*, NPTEL, Autumn 2024
- **Teaching Assistant**, *Statistical Learning Theory*, CSE, IIT Kharagpur, Autumn 2024
- **Reviewer**, *Computational Geometry: Theory and Applications* (Journal)
- **Selected Representative** of IIT Kharagpur in *Sakura Science Exchange Program*, Japan, 2024
- **Author and Editorialist**, *Codeforces Round #819 (Div-1 + Div-2)*, September 6, 2022
- **Lecturer**, *Competitive Programming Workshop*, IIT Kharagpur in 2022 & 2023
- **Tech Lead**, *Codeclub*, Departmental Society, CSE, IIT Kharagpur
- **Governor**, *Grimoire of Code*, Official Competitive Programming Society, IIT Kharagpur
- **Captain**, Maths Olympiad, *Lal Bahadur Shastri Hall of Residence*, IIT Kharagpur.
- **Associate Member**, *Chess Club*, IIT Kharagpur
- **Volunteer**, *National Service Scheme (NSS)* for social service, IIT Kharagpur