

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 eight semesters): **9.90/10** 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)* — To appear.
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>

INTERNSHIP

- **Research Assistant, Distributed Algorithms group** May 2024 – July 2024
Aalto University, Espoo, Finland Supervisor: Prof. Jukka Suomela
 - Proved 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

• Academic:

- *Current Department Rank 1* among 70 students in *CSE, IIT Kharagpur*
- **Senior Scholar**, *Jagadish Bose National Science Talent Search (JBNSTS) scholarship*
- *All India Rank 489* in *JEE Advanced, 2020* among ~150,000 shortlisted candidates
- *All India Rank 126* in *KVPY SA, 2018* among ~100,000 candidates
- *All India Rank 381* in *KVPY SX, 2019* among ~150,000 candidates
- *Rank 12* in *West Bengal Joint Entrance Examination 2020* among ~120,000 candidates
- *Rank 10* in *Higher Secondary Examination, 2020*, among ~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)**, **2020**
- **Gold Medalist, Mathematics Olympiad 2024, General Championships, IIT Kharagpur**

COURSEWORK INFORMATION

- **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, Algorithms-II, Formal Language & Automata Theory, Algorithms-I*, Discrete Structures, Foundations of Cryptography, 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 completed in Autumn 2024 but awaits grading

OTHER ACTIVITIES, ACADEMIC DUTIES & POSITIONS OF RESPONSIBILITY HELD

- **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** of *Chess Club*, IIT Kharagpur
- **Volunteer**, *National Service Scheme (NSS)* for social service, IIT Kharagpur