



Snehadeep Gayen | CS21B078
B. Tech Computer Science and Engineering
Indian Institute of Technology, Madras



EDUCATION

B. Tech CSE | CGPA 9.90 📅 Jul '21 - Present
Indian Institute of Technology Madras 📍 Chennai, TN

HSC Class 12th | 98.17% 📅 Apr '20 - Apr '21
Pace Junior Science College 📍 Mumbai, MH

ICSE Class 10th | 98.80% 📅 Apr '18 - Apr '19
Lilavatibai Podar High School 📍 Mumbai, MH

EXPERIENCE

Team Avishkar Hyperloop, CFI 📅 Oct '22 - Present

- Part of Code Development Team of the **Main Control Unit** and **Navigation Unit** of our Pod.
- Used **RTOS, threading** and communication protocols like MQTT, CAN, etc. to collect and store data from over 20 sensors at **low latency, handling faults** appropriately.
- Participated in the prestigious **European Hyperloop Week - Scotland 2023**, among over 25 teams globally to represent the country.

Tutor & Contributor, NPTEL 📅 March '23 - Present

- Created **YouTube tutorials** for previous years' GATE CS questions
- These tutorials aim to support applicants who may have limited access to resources

CODING ACHIEVEMENTS

- Maximum Rating 1678 (**Expert**) on Codeforces
- ICPC 2022 - AIR 151** and **Institute Rank 7** in Kanpur-Mathura Qualifier Round
- AIR 3** in Shaastra CP Potpourri (Mixed-bag coding contest) [Shaastra is Asia's largest student-run Techfest]
- Global Rank 9** in CodeChef Starters 96
- Global Rank 231** in Codeforces Round 881
- Global Rank 373** in Google Farewell Round B
- 1st place in Inter-School Java Competition in Mumbai

SOFTWARE SKILLS

- Languages:** C++, C, HDL (Verilog), Python, Java, HTML, CSS, x86, RISC and 8085 ASM, R
- Tools:** TI CCS, Git, **LaTeX**, AutoCAD, GDB
- Libraries:** TI RTOS, NumPy, PyLops, Matplotlib

EXTRACURRICULAR ACTIVITIES

- Sports:** Taekwondo Red Dan II Belt, Awarded Best Athlete U14 at School, School Sports Captain for 2019-20. Awarded 13 medals in various Track & Field events in High School, NSO Athlete at IITM
- Mentored freshmen, personally and academically, under **Saathi, IIT Madras**
- Avid book reader and Tabla player

SCHOLASTIC ACHIEVEMENTS

- Secured **AIR 5** in JEE Mains out of 1 million students
- Secured **AIR 161** in JEE Advanced
- Secured **AIR 10** in Indian Statistical Institute Exam
- Secured **AIR 21** in INChO and attended Orientation Camp for International Chemistry Olympiad
- Awarded KVPY Fellowship '21 with **AIR 338**
- Winner of Mimamsa '22 at IISER Pune
- 4th place in Chemenigma '22 at IISC Bangalore & Won Silver Medal in Homi Bhabha Science Competition (conducted in Maharashtra)

PROJECTS

WiFi Tomography (Ongoing) *Python*
Project Under Prof. Ayon Chakraborty 📅 May '23 - Present

- WiFi tomography is a low-cost and easily implementable method to image the environment using WiFi signals.
- Working on computational optimisation of Tomographic Reconstruction to make it suitable for outdoor and indoor drone application

CPU Design 📁📁 *Verilog*
CS2610 Course Project - Prof. C. Chandra Sekhar 📅 Jan-May '23
CS2310 Course Project - Prof. Ayon Chakraborty 📅 Jul-Nov '22

- Implemented a CPU with register file and ALU with instructions to perform Arithmetic and Logical operations on both 8-bit integers and 12-bit floating-point numbers
- Built a combinational 8-bit CPU from gate level

Reading Project and Presentation 📁
CS6122 Course Project - Prof. B. V. R. Rao 📅 Jan-May '23

- Presented the paper on "Smoothed Analysis of Partitioning Algorithms for Euclidean Functionals" by Bläser, M., Manthey, B. & Rao, B.V.R. and discussed its applications to problems

Closeness Centrality Algorithm 📁 *C++*
Project under Prof. Manikandan Narayanan 📅 May-Jun '23

- Implemented the CENDY algorithm based on this paper 📁
- This on-line algorithm updates Average Path Length and Closeness Centrality of all nodes in a Dynamic Graph

COURSES & LABS

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| • Basic Electrical Engg | • Discrete Maths |
| • Computer Systems Design | • Basic Graph Theory |
| • Programming and Data Structures | • Probability, Statistics & Stochastic Processes |
| • Computer Organisation and Architecture | • Series and Matrices |
| • Design & Analysis of Algorithms | • Multivariable Calculus |
| • Theory of Computation | • Ordinary Differential Equations (PG) |
| • Probabilistic, Smoothed Analysis of Algorithms (PG) | • Principles of Economics |
| • Object Oriented Programming | • Intro to Game Theory |
| | • Compiler Design * |
| | • Operating System * |
| | * Ongoing |