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CPI : 8.13/10

- **Real Analysis** **On Taylor's approximation and some associated theorems for convergence of power series with computational applications.** Dec 2021 - Jan 2022
 - **Supervisor** : Dr. Anandteertha Mangasuli, IISERB
 - Studied analytical results on convergence of Taylor's series. Primary focus was on Bernstein's theorem, Abel's limit theorem & Tauber's first theorem from the perspective of analytical approximation theory.
 - Explored theory on minimisation of error in Taylor's approximation, via it's integral form.
 - Additionally studied '*Higher-order Taylor method to numerically solve DEs*' as a computational application of the theory (implementation in python).
 - **Report** : [ResearchGate](#) | **Code** : [Jupyter Notebook](#)
- **Artificial Intelligence** **Acoustic scene classification using auditory dataset.** Aug 2021 - Dec 2021
 - Built a system employing a CNN based framework (*PyTorch, Librosa*) to classify audio scenes.
 - Used robust statistical data analysis and data pre-processing including exploitation of physics based Mel spectrograms to boost predictability.
 - **Report** : [arXiv:2112.13450](#) | **Code** : [GitHub Repo](#)
- **Deep Maths** **A preliminary survey on Deep Maths. (Reading project)**
 - Studied the collaborative works done by Google DeepMind and Oxford University, and the foundations of problem-specific ANNs in solving problems in abstract mathematics.
 - Explored advancements in active research on guiding mathematical intuition using AI.
 - **Report** : [10.13140/RG.2.2.18971.34085](#)

CONFERENCES & WORKSHOPS

- Attended [exSPLORe 2025](#), a five-day workshop cum conference conducted jointly by Google & [Safexpress Centre for Data, Learning and Decision Sciences](#). Jan 2025
- Attended **Annual Mathematics Symposium 2024 - (Analysis)**, a three-day conference conducted by the Dept. of Mathematics at IISER Bhopal. Feb 2023
- Attended 8th **India School of Logic and its Applications** [ISLA 2020], a virtual school conducted jointly by IISERB & [Association of Logic in India \(ALI\)](#). Dec 2020

SCHOLASTIC ACHIEVEMENTS

- Obtained an **A-grade** for the research work done during my *MS Thesis project*.
- Obtained an **O-grade** for outstanding performance in the course *DSE 309 : Advanced programming in Python*.
- Awarded the **Mitacs Globalink Research Grant** (CAD 10,000) for an on-site research project in **Montréal**.
- Cleared ISI B.Math entrance examination - round 1 (**clearance only for top 150 out of 50k+ applicants**).

CO-CURRICULAR ACHIEVEMENTS

- **Second Runners Up** at SBI NUMERO YONO QUIZ, *Central India region*.
- **Third Runners Up** at CBSE HERITAGE INDIA QUIZ, *National Semi Finale*.
- **First Runners Up** at BHARAT KO JANO QUIZ COMP., *National Finale*.
- **Gold Medal** for Intra State Rapid-Fire chess tournament, *Assam*.

VOLUNTEERED RESPONSIBILITIES

- **Event Coordinator** for the Interactive Quiz Event in the annual outreach programme of IISER-B.
- **Department Representative** for the mathematics 2019 batch.
- **Coordinator** at IISERB QUIZ CLUB for 2 consecutive terms.

REFERENCES

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|--|-------------------|--|----------------------|
| • Dr. Anandteertha Mangasuli | IISERB | anand@iiserb.ac.in | |
| • Dr. Janosch Ortmann | UQAM | ortmann.janosch@uqam.ca | |
| • Dr. Partha Pratim Das | Ashoka University | partha.das@ashoka.edu.in | (teaching reference) |

*All links and hyperlinks are underlined.