

Nirjhar Das

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Education

2024– Present **Indian Institute of Science, Bangalore**
M.TECH (RESEARCH) COMPUTER SCIENCE

2019–2023 **Indian Institute of Technology Delhi**
B.TECH ELECTRICAL ENGINEERING
GPA: **9.381**/10 (Department Rank 5)
Specialization in Cognitive and Intelligent Systems (**AI Focus Area**)
Courses: Reinforcement Learning and Stochastic Control; Online Learning, Bandits and Optimization; Convex Optimization; Concentration Inequalities; Machine Learning; Probability and Stochastic Processes; Math for ML

Experience

Aug 2024– Present **Indian Institute of Science, Bangalore**
RESEARCH STUDENT
Advisor - Prof. Siddharth Barman
Working on problems at the intersection of Learning Theory, Game Theory and Computational Social Choice.

Aug 2023– June 2024 **Microsoft Research, Bangalore**
RESEARCH INTERN
Manager - Dr. Gaurav Sinha
Worked on new bandit models better suited to industrial application in advertising and developed algorithms with theoretical guarantees and empirical performance.

2019–2023 **Indian Institute of Technology Delhi**
UNDERGRADUATE
BTech Thesis [Part 1](#) - Inverse Reinforcement Learning with Constraint Recovery and [Part 2](#) - Linear Rotting Bandits [won **Best BTech Thesis Award**]
Teaching assistant for the graduate course on Reinforcement Learning and Stochastic Control.

Summer 2022 **Mastercard AI Garage, Gurgaon**
ARTIFICIAL INTELLIGENCE INTERN
Built a semi-supervised deep learning pipeline for fraud detection in credit card transaction.

Publications

- 1 Nirjhar Das, Gaurav Sinha. “**Linear Contextual Bandits with Hybrid Payoff: Revisited**”. *Accepted* in European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases
[Paper](#) , **ECML PKDD 2024**
- 2 Nirjhar Das, Souradip Chakraborty, Aldo Pacchiano, Sayak Ray Chowdhury. “**Provably Sample Efficient RLHF via Active Preference Optimization**”. *Accepted* in TTIC Summer Workshop on Adaptive Learning in Complex Environments
[Paper](#)

- 3 Ayush Sawarni, Nirjhar Das, Siddharth Barman, Gaurav Sinha. “**Optimal Regret with Limited Adaptivity for Generalized Linear Contextual Bandits**”. *Under Review* in The Thirty-eighth Annual Conference on Neural Information Processing Systems
[Paper ↗](#) , [NeurIPS 2024](#) (Under Review)
- 4 Nirjhar Das and Arpan Chattopadhyay. “**Inverse Reinforcement Learning With Constraint Recovery**”. **Best Paper Award** in 10th International Conference on Pattern Recognition and Machine Intelligence
[Paper ↗](#) , [PReMI 2023](#)
- 5 Mustafa Chasmai, Nirjhar Das, Aman Bhardwaj, Rahul Garg. “**A View Independent Classification Framework for Yoga Postures**”. Springer Nature Computer Science, Vol 3.
[Paper ↗](#) , [SNCS Sept 2022](#)
- 6 Smriti Chawla, Anja Rockstroh, Melanie Lehman, Ellca Ratther, Atishay Jain, Anuneet Anand, Apoorva Gupta, Namrata Bhattacharya, Sarita Poonia, Priyadarshini Rai, Nirjhar Das, Angshul Majumdar, Jayadeva, Gaurav Ahuja, Brett G. Hollier, Colleen C. Nelson and Debarka Sengupta. “**Gene expression based inference of cancer drug sensitivity**”. Nature Communications, 13.
[Paper ↗](#) , [Nat. Comm. Sept 2022](#)

Honors and Awards

- 2023 **Best BTech Project Award:** Won the award among 160+ students in the EE department for research carried out in BTech Project.
- 2023 **Amazon ML Challenge 2023:** Achieved 6th rank out of 5000+ teams by building a deep-learning model for the prediction of package length from item description.
- 2022 **Research Week with Google 2023:** Selected to attend the conference.
- 2020 **IIT Kanpur Cybersecurity Hackathon 2020:** Achieved 3rd rank out of 1200+ teams by building a machine learning pipeline for botnet detection.
- 2019–2023 **Top 7% Merit Award:** Achieved in 4 semesters out of 8 semesters.
- 2019 **ISC (Indian School Certificate):** Achieved 2nd rank all over India out of 100000 students in Class XII Board Exam with 499/500 marks
- 2019 **Swami Vivekananda Scholarship:** Awarded by *Hon’ble Chief Minister* of West Bengal for excellent performance in Class XII Board Exam.
- 2019 **JEE Advanced:** Achieved rank of 721 out of 150000 students
- 2017–2018 **KVPY (Kishore Vaigyanik Protsahan Yojana):** Selected for Scholarship by *Dept of Science and Technology, Govt of India* and achieved ranks 94 and 175 in 2018 and 2017 respectively

Skills

Python, C, C++, Java

Programming Languages

Linux, Git, L^AT_EX

Tools and Systems

Portable Batch System (PBS)

High Performance Computing

Tensorflow, Keras, Pytorch

Deep Learning

NumPy, SciPy, Matplotlib, Scikit Learn, Pandas, Cvxpy

Data Science Libraries

Academic Projects

- May 2023– **Participatory Budgeting with Bandits** *with* Prof. Siddharth Barman, IISc Bangalore
Aug 2023 Developed new model for participatory budgeting combining ideas from bandit literature and computational social choice · Performed experiments on real world datasets · Draft in progress.
- Sept 2022– **Linear Rotting Bandits** *with* Prof. Arpan Chattopadhyay, IIT Delhi
Mar 2023 Extended rotting bandits to the linear reward · Developed an algorithm that outperforms existing non-stationary linear and stochastic rotting bandit algorithms empirically.
- Spring 2022 **Resource Monitoring and Scheduling Course Project** Prof. Smruti Sarangi, IIT Delhi
Created system calls for listing the running processes, memory available, and the number of context switches per process · Implemented scheduling algorithms FCFS, MLQ and DMLQ and obtained the process statistics

Academic Service and Extracurricular Activities

- **Teaching assistant** for the graduate course on Reinforcement Learning and Stochastic Control.
- **Student Mentor** for 5 freshmen. Helped them transition to college and ensured their professional and personal growth.
- **Academic Mentor** for the course Engineering Mechanics. Helped first year students in understanding the course materials and in problem solving.
- **Student Journalist** for the Board for Student Publication reporting on latest developments on the campus that affected the community.
- **Executive** for the Electrical Engineering Society. Organized various events for the benefit of the EE students.
- **Teaching volunteer** for National Service Scheme from 2019–2022. Taught mathematics and science to underprivileged children from slums of Delhi.