

Anand Krishna

Lead AI Scientist, Pairo · Bengaluru, India
anandkrishna1995@live.com · anandkrishna.me

I lead Data Science & AI at Pairo. Previously a Research Consultant in Walmart's AdTech team, and a Postdoctoral Research Fellow at the National University of Singapore working on outlier-robust optimization and multi-armed bandits. I completed my Ph.D. at the Indian Institute of Science as a Prime Minister's Research Fellow, under Prof. Y. Narahari and Assoc. Prof. Siddharth Barman.

Experience

May 2025 – Present
Bengaluru, India

Lead AI Scientist AT Pairo

Leading Data Science & AI. Pairo builds AI systems and agents that supercharge marketing workflows and bring brands closer to consumers.

AI systems trained on a brand's structured and unstructured marketing data – social content, marketplace data, first-party customer data – to build a knowledge representation of the brand and its category.

Agents that run analytics and data-science workflows over that representation to produce actionable insight and guide marketing execution.

Used by brands to identify content whitespaces, target creative and creator recommendations at ROI, and audit creator risk before commercial commitments.

Nov 2024 – Apr 2025
Bengaluru, India

Research Consultant, AdTech AT Walmart

Built scalable systems for real-time advertiser query processing to estimate impressions.

Approximate query processing and high-performance data pipelines over large-scale systems.

Sep 2023 – Sep 2024
Singapore

Postdoctoral Research Fellow AT **National University of Singapore**

School of Computing, working with Prof. Vincent Y. F. Tan.

Outlier-robust optimization and multi-armed bandits, including the LEARN invex loss for outlier-oblivious online convex optimization (UAI 2026).

Extended p-mean welfare objectives from social choice to stochastic bandits, unifying average and Nash regret in one algorithm (AAAI 2025).

Sample-efficient alternating minimization for robust phase retrieval, published in IEEE Transactions on Information Theory.

Aug 2018 – Aug 2023
Bengaluru, India

Prime Minister's Research Fellow (PMRF) AT **Indian Institute of Science**

Ph.D. in the Department of Computer Science and Automation, advised by Prof. Y. Narahari and Assoc. Prof. Siddharth Barman.

Approximation algorithms for fair division: Nash social welfare and p-mean welfare under subadditive, XOS, and dichotomous valuations.

Results published at ESA 2020, IJCAI 2022, WINE 2022, and ITCS 2024.

Jun 2019 – Sep 2019
Bengaluru, India

Research Intern AT **IBM Research India**

Developed a privacy-preserving framework for Discrete Preference Games with Dr. Ramasuri Narayanam and Dr. Rishi Saket. Presented the work at IBM and IISc.

Jun 2018 – Jul 2018
Bengaluru, India

Research and Development Intern AT **Aindra Systems**

Regression models predicting reagent dipping times in the Papanicolaou staining procedure, for Aindra's auto-stainer.

Education

2018 – 2023

Direct Ph.D., Intelligent Systems

Indian Institute of Science

Department of Computer Science and Automation, as a Prime Minister's Research Fellow. CGPA 8.9/10. Advised by Prof. Y. Narahari and Assoc. Prof. Siddharth Barman. Coursework included Game Theory, Reinforcement Learning, Linear & Nonlinear Optimization, Stochastic Modeling, Matrix Theory, Foundations of Data Science, and Topics in Pattern Recognition.

2013 – 2017

B.Tech, Computer Science & Engineering

Government Engineering College, Thrissur

CGPA 8.28/10.

Publications

Adarsh Barik, Anand Krishna, Vincent Y. F. Tan. *Dynamic Regret in Outlier-Oblivious Online Optimization using Nonconvex Robust Losses*. **UAI 2026**, 2026.

Adarsh Barik, Anand Krishna, Vincent Y. F. Tan. *A Sample Efficient Alternating Minimization-based Algorithm for Robust Phase Retrieval*. **IEEE Transactions on Information Theory**, 2025.

Anand Krishna, Philips George John, Adarsh Barik, Vincent Y. F. Tan. *p-Mean Regret for Stochastic Bandits*. **AAAI 2025**, 2025.

Siddharth Barman, Anand Krishna, Pooja Kulkarni, Shivika Narang. *Sublinear Approximation Algorithm for Nash Social Welfare with XOS Valuations*. **ITCS 2024**, 2024.

Siddharth Barman, Anand Krishna, Y. Narahari, Soumyarup Sadhukhan. *Nash Welfare Guarantees for Fair and Efficient Coverage*. **WINE 2022**, 2022.

Siddharth Barman, Anand Krishna, Y. Narahari, Soumyarup Sadhukhan. *Achieving Envy-Freeness with Limited Subsidies under Dichotomous Valuations*. **IJCAI 2022**, 2022.

Siddharth Barman, Umang Bhaskar, Anand Krishna, Ranjani G. Sundaram. *Tight Approximation Algorithms for p-Mean Welfare Under Subadditive Valuations*. **ESA 2020**, 2020.

Teaching

Jan 2021 – Feb 2022	Probability Models Dayananda Sagar University • Instructor
Aug – Dec 2022	Computational Methods of Optimization E0 230 Indian Institute of Science • Teaching Assistant
Jan – Jun 2020, 2021, 2022	Game Theory E1 254 Indian Institute of Science • Teaching Assistant
Feb – Jun 2021	Randomized Algorithms E0 234 Indian Institute of Science • Teaching Assistant
Aug – Dec 2019	Linear Algebra and Probability E0 226 Indian Institute of Science • Teaching Assistant

Awards & honours

Mar 2023	Best Presentation Award, EECS Symposium in Theoretical Computer Science Indian Institute of Science
Feb 2023	Best Poster Award in Computer Science & Engineering, Data Science and Mathematics – invited to the highlighted poster session PMRF Symposium, IIT Madras
Jan 2023	Invited talk on the IJCAI 2022 paper National University of Singapore
2020	ADFOCS 2020 summer school on Market Design & Computational Fair Division Max Planck Institute for Informatics
2020	Theory of Reinforcement Learning Boot Camp Simons Institute for the Theory of Computing

2020

EC'20 Global Outreach Program and EC Mentoring Workshop

ACM Conference on Economics and Computation

2018

Prime Minister's Research Fellowship (PMRF)

Government of India

Academic service

SUBREVIEWER

Focs 2024

APPROX 2023

WWW 2023

SOSA 2023

WWW 2022

SAGT 2021

WINE 2020

WINE 2019

Areas & tools

RESEARCH AREAS

Game Theory

Fair Division

Online Learning

Randomized Algorithms

Reinforcement Learning

Optimization

Machine Learning

Deep Learning

Statistics

PROGRAMMING

Python

SQL

C++

C

LaTeX

LIBRARIES

PyTorch

scikit-learn

NumPy

Pandas

PySpark

Matplotlib

Seaborn

LANGUAGES

Malayalam · Native

English · Fluent

Tamil · Conversational

Hindi · Conversational