



Prem Kant

Department of Industrial Engineering & Operations Research

Indian Institute of Technology Bombay

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Date of Birth: 11/06/1996

Research Interests

- Combinatorial Game Theory,
- Bidding Combinatorial Games,
- Algorithmic Game Theory.

Employment

Feb 2026 - present	Postdoctoral Fellow Supervisor: Prof. Martin Mueller, Faculty of Science - Computing Science, University of Alberta, Canada
Nov 2025 - Jan 2025	Research Scientist Department of Industrial Engineering & Operations Research, Indian Institute of Technology, Bombay, India
May 2025 - Oct 2025	Research Associate Department of Industrial Engineering & Operations Research, Indian Institute of Technology, Bombay, India

Education

2019 - 2025	Ph.D. , Department of Industrial Engineering & Operations Research, Indian Institute of Technology, Bombay, India Thesis Title: <i>Bidding Combinatorial Games</i> Advisors: Prof. Urban Larsson and Prof. K. S. Mallikarjuna Rao
2016 - 2018	M.Sc. , Statistics–Operations Research University of Hyderabad <i>Gold Medalist</i>
2013 - 2016	B.Sc. , Mathematics (Hons.) St. Xavier's College, Ranchi

Fellowships & Awards

- INSPIRE Fellowship, Department of Science and Technology (DST), Government of India, awarded to pursue PhD.
- Gold Medal, M.Sc. in Statistics–OR, University of Hyderabad (2018).
- Qualified GATE 2019 in Statistics with AIR 23.

Technical Skills

- Programming Languages: Python, CG-Suite
- Design and Visualization Tools: Canva, Inkscape

Publications

- [3] Prem Kant and Urban Larsson. Survey on richman bidding combinatorial games. In Games of No Chance, volume 71, pages 43–54. MSRI Publ. Cambridge University Press, 2025. [\[Link\]](#)
- [2] Prem Kant, Urban Larsson, Ravi K Rai, and Akshay V Upasany. Constructive comparison in bidding combinatorial games. International Journal of Game Theory, pages 1–26, 2025. [\[Link\]](#)
- [1] Prem Kant, Urban Larsson, Ravi K. Rai, and Akshay V. Upasany. Bidding combinatorial games. The Electronic Journal of Combinatorics, 31(1):51, 2024. [\[Link\]](#)

Work in Progress

- Prem Kant and Urban Larsson. Numbers and infinitesimals in bidding combinatorial games.
- Prem Kant, Urban Larsson. A number game reconciliation. Preprint 2025. [\[arXiv Link\]](#)

Conference and Workshop Presentations

- **“Bidding Combinatorial Games”**
Presented at Games at Mumbai, IIT Bombay (Jan 2024).
- **“Constructive Comparison in Bidding Combinatorial Games”**
Presented at:
 - Combinatorial Group of the international community (Sep 2022),
 - The Japan Conference on Discrete and Computational Geometry, Graphs, and Games, JCDCG³ (Sep 2022, 2024),
 - Combinatorial Game Theory Colloquium 4 (Jan 2023).
- **“Numbers and Infinitesimals in bidding combinatorial games”**
Presented at Combinatorial Game Theory Colloquium 5 (Feb 2025).
- **“Survey on Richman Bidding Combinatorial Games”**
Presented at Recreational Mathematics Colloquium 8 (Feb 2025).

Teaching Assistantship

Autumn 2020:	IE 621: Probability and Stochastic Models-I with Prof. K.S. Mallikarjuna Rao
Spring 2020:	IE 616: Decision Analysis and Game Theory with Prof. K.S. Mallikarjuna Rao
Autumn 2021:	IE 708: Markov Decision Processes with Prof. K.S. Mallikarjuna Rao, NPTEL Game Theory Course TA with Prof. K.S. Mallikarjuna Rao
Spring 2021:	IE 616: Decision Analysis and Game Theory with Prof. K.S. Mallikarjuna Rao
Autumn 2022:	IE 501: Optimization Models with Prof. K.S. Mallikarjuna Rao, NPTEL Game Theory Course TA with Prof. K.S. Mallikarjuna Rao
Spring 2022:	IE 616: Decision Analysis and Game Theory with Prof. Urban Larsson
Autumn 2023:	IE 619: Combinatorial Game Theory with Prof. Urban Larsson, NPTEL Game Theory Course TA with Prof. K.S. Mallikarjuna Rao
Spring 2023:	IE 616: Decision Analysis and Game Theory with Prof. Veeraruna Kavitha and Prof. Urban Larsson

Leadership and Outreach

- **Sports Councillor, Hostel 18, IIT Bombay (June 2023- October 2024):**
Led sports activities for Hostel 18, comprising approximately 1100 students, in institute-wide competitions, and developed sports infrastructure and fitness facilities to support active participation.
- **Team Member, IIT Bombay Ultimate Frisbee Team (2024–2025).**
Represented IIT Bombay in several tournaments, including Udghosh (IIT Kanpur Sports Fest), Mumbai Locals, and Aavhan (IIT Bombay Sports Fest).
- **Organizer & Speaker, Games at Mumbai 2024, IIT Bombay (Jan 21–25, 2024):**
Co-organized the opening game session, assisted with workshop coordination, and delivered a talk on Combinatorial Game Theory.
- **Volunteer, WISE (Women in Science and Engineering), IIT Bombay, 2025:**
Conducted a session and assisted in delivering outreach activities aimed at introducing science and engineering to 200 girl students from rural backgrounds.
- **Volunteer, International Day of Yoga, IIT Bombay (2023, 2024):**
Contributed to event organization and logistics for institute-wide participation.
- **Volunteer, Mahashivratri, Isha Foundation Coimbatore(2023, 2025):**
Volunteered as a security coordinator during a night-long spiritual event attended by over 500,000 devotees, assisting in crowd management and ensuring safe and orderly movement across multiple areas of the venue.
- **Holds an NCC 'C' Certificate from the National Cadet Corps (India).**