Pratik Gajane

Phone	+31-633-313-415	Google Scholar ID	L_5GdNcAAAAJ
Email	pratik.gajane@gmail.com	ORCID	0000-0002-8087-5661
LinkedIn	pratik-gajane-aa0811255	personal webpage	pratikgajane.github.io

Academic Experience

Feb 2021 to - **Eindhoven University of Technology (The Netherlands)**
Position **Postdoctoral researcher**
Feb 2018 to Jan 2021 **Montanuniversität Leoben (Austria)**
Position **Postdoctoral researcher**

Education

2014 to 2017 **INRIA Lille-team SequeL, Université Lille & Orange labs (France)**
Qualification **PhD**
Defense Date Nov 2017
Thesis Sequential Learning with Partial Feedback

2012 to 2014 **Indian Institute of Technology Madras (India)**
Qualification **Master of Technology in Computer Science**, CGPA : **9.19/10**
Thesis Methods for the Multi-Armed Bandit problem

2005 to 2009 **University of Pune (India)**
Qualification **Bachelor of Engineering in Computer Science**, **First Class**

Preprints

[1] Danil Provodin, Pratik Gajane, Mykola Pechenizkiy and Maurits Kaptein. Provably Efficient Exploration in Constrained Reinforcement Learning: Posterior Sampling Is All You Need, arXiv:2309.15737.

[2] Pratik Gajane, Akrati Saxena, Maryam Tavakol, George Fletcher and Mykola Pechenizkiy. Survey on Fair Reinforcement Learning: Theory and Practice, arXiv:2205.10032.

[3] Pratik Gajane, Ronald Ortner, Peter Auer and Csaba Szepesvari. Autonomous Exploration for Navigating in Non-stationary Controlled Markov Processes, arXiv:1910.08446.

Peer-reviewed Publications

[4] Ronald C. van den Broek, Rik Litjens, Tobias Sagis, Luc Siecker, Nina Verbeeke and Pratik Gajane. Multi-Armed Bandits with Generalized Temporally-Partitioned Rewards. Accepted for presentation at *the 22nd Symposium on Intelligent Data Analysis (IDA)*, 2024. To be held in Stockholm in April 2024.

[5] Jiong Li and Pratik Gajane. Curiosity-driven Exploration in Sparse-reward Multi-agent Reinforcement Learning. In *the 16th European Workshop on Reinforcement Learning (EWRL)*, 2023

[6] Ronald C. van den Broek, Rik Litjens, Tobias Sagis, Luc Siecker, Nina Verbeeke and Pratik Gajane. Multi-Armed Bandits with Generalized Temporally-Partitioned Rewards. In *the 16th European Workshop on Reinforcement Learning (EWRL)*, 2023

[7] Rosa van Tuijn, Tianqin Lu, Emma Driesse, Koen Franken, Pratik Gajane and Emilia Barakova. WeHeart: A Personalized Recommendation Device for Physical Activity Encouragement and Preventing "Cold Start" in Cardiac Rehabilitation. In *the proceedings of the 19th International Conference on Human-Computer Interaction (INTERACT)*, 2023.

[8] Pratik Gajane, Peter Auer and Ronald Ortner. Autonomous Exploration for Navigating in MDPs using Blackbox RL Algorithms. In *the proceedings of the 32nd International Joint Conference on Artificial Intelligence (IJCAI)*, 2023.

[9] Dennis Collaris, Pratik Gajane, Joost Jorritsma, Jarke J. van Wijk and Mykola Pechenizkiy. LEMON: Alternative Sampling for More Faithful Explanation through Local Surrogate Models. In *the proceedings of the 21st Symposium on Intelligent Data Analysis (IDA)*, 2023. Runner-up Frontier Prize.

[10] Rosa van Tuijn, Tianqin Lu, Emma Driesse, Koen Franken, Pratik Gajane and Emilia Barakova. WeHeart: A Personalized Recommendation Device for Physical Activity Encouragement and Preventing "Cold Start" in Cardiac Rehabilitation (extended abstract). In *the 2nd International Conference on Hybrid Human-Artificial Intelligence (HHAI)*, 2023.

[11] Pratik Gajane. Local Differential Privacy for Sequential Decision Making in a Changing Environment. In *AAAI Privacy Preserving Artificial Intelligence (PPAI)*, 2023.

[12] Danil Provodin, Pratik Gajane, Mykola Pechenizkiy and Maurits Kaptein. An Empirical Evaluation of Posterior Sampling for Constrained Reinforcement Learning. In *the Reinforcement Learning for Real Life Workshop at NeurIPS*, 2022.

[13] Danil Provodin, Pratik Gajane, Mykola Pechenizkiy and Maurits Kaptein. The Impact of Batch Learning in Stochastic Linear Bandits. In *the proceedings of the 22nd International Conference on Data Mining (ICDM)*, 2022.

[14] Danil Provodin, Pratik Gajane, Mykola Pechenizkiy and Maurits Kaptein. The Impact of Batch Learning in Stochastic Bandits. In *the workshop on Ecological Theory of Reinforcement Learning at NeurIPS* 2021.

[15] Filipo Studzinski Perotto, Sattar Vakili, Pratik Gajane, Yaser Faghan and Mathieu Bourgais. Gambler Bandits and the Regret of Being Ruined. In *the proceedings of the 20th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2021.

[16] Ronald Ortner, Pratik Gajane and Peter Auer. Variational Regret Bounds for Reinforcement Learning. In *the proceedings of the 35th Conference on Uncertainty in Artificial Intelligence (UAI)*, 2020.

[17] Peter Auer, Pratik Gajane and Ronald Ortner. Adaptively Tracking the Best Bandit Arm with an Unknown Number of Distribution Changes. In *the proceedings of the 32nd Annual Conference on Learning Theory (COLT)*, 2019.

[18] Peter Auer, Yifang Chen, Pratik Gajane, Chung-Wei Lee, Haipeng Luo, Ronald Ortner and Chen-Yu Wei. Achieving Optimal Dynamic Regret for Non-stationary Bandits without Prior Information. In *the proceedings of the 32nd Annual Conference on Learning Theory (COLT)*, 2019.

[19] Pratik Gajane, Ronald Ortner and Peter Auer. A Sliding-Window Approach for Reinforcement Learning in MDPs with Arbitrarily Changing Rewards and Transitions. In *Lifelong Learning: A Reinforcement Learning Approach Workshop at FAIM 2018*. Best Paper Award.

[20] Pratik Gajane and Mykola Pechenizkiy. On Formalizing Fairness in Prediction with ML. In *the 5th Workshop on Fairness, Accountability, and Transparency in Machine Learning (FAT/ML)*, 2018.

[21] Peter Auer, Pratik Gajane and Ronald Ortner. Adaptively Tracking the Best Bandit Arm with an Unknown Number of Distribution Changes. In *the 14th European Workshop on Reinforcement Learning (EWRL)*, 2018.

[22] Pratik Gajane, Tanguy Urvoy and Emilie Kaufmann. Corrupt Bandits for Preserving Local Privacy. In *the proceedings of the 29th International Conference on Algorithmic Learning Theory (ALT)*, 2018.

[23] Carolin Lawrence, Pratik Gajane and Stefan Riezler. Counterfactual Learning for Machine Translation: Degeneracies and Solutions. In *the workshop for Causal Inference and Machine Learning for Intelligent Decision Making at NeurIPS* 2017.

[24] Pratik Gajane, Tanguy Urvoy and Emilie Kaufmann. Corrupt bandits. In *the 13th European Workshop on Reinforcement Learning (EWRL)*, 2016.

[25] Pratik Gajane, Tanguy Urvoy and Fabrice Clerot. A Relative Exponential Weighing Algorithm for Adversarial Utility-based Dueling Bandits. In *the proceedings of the 32nd International Conference on Machine Learning (ICML)*, 2015.

[26] Pratik Gajane and Tanguy Urvoy. Utility-based Dueling Bandits as a Partial Monitoring Game. In *the 12th European Workshop on Reinforcement Learning (EWRL)*, 2015.

Awards and Recognition

- Runner-up Frontier Prize at the 21st Symposium on Intelligent Data Analysis (IDA), 2023.
- Travel grant of 3000 CAD awarded by the Alberta Machine Intelligence Institute to attend Upper Bound 2023, Edmonton, Canada.
- Best Paper Award at Lifelong Learning: A Reinforcement Learning Approach Workshop at FAIM 2018.

- Nominated for the Best Master's Thesis in Computer Science at the Indian Institute of Technology Madras, 2014.
- Top 0.25 percentile in the Graduate Aptitude Test in Engineering (Computer Science) India 2012.
- Won the 3^{rd} prize in a national level robotics competition – Versatalia, 2008.

Teaching

2022-23 Q2	Data Mining (Lecturer)	BSc	140 students	Eindhoven Univ. of Technology
2022-23 Q1	Reinforcement Learning (Lecturer)	MSc	35 students	Eindhoven Univ. of Technology
2022-23 Q1	Embodying Intelligent Behavior in Social Context (Lecturer)	MSc	41 students	Eindhoven Univ. of Technology
2021-22 Q4	Data Intelligence (Project Supervision)	MSc	50 students	Eindhoven Univ. of Technology
2013-14 S2	Data Mining (TA)	BSc	~ 20 students	IIT Madras
2013-14 S1	Introduction to Machine Learning (TA)	BSc	~ 60 students	IIT Madras
2012-13 S2	Computational Engineering (TA)	BSc	~ 50 students	IIT Madras
2012-13 S1	Introduction to Research (TA)	BSc	~100 students	IIT Madras

See some of my student evaluations in my UTQ/BKO dossier.
A short snippet from my introductory lecture on reinforcement learning can be found at this link.

Pedagogical Certifications

2023	University Teaching Qualification (UTQ/BKO)	
2023	Assessment of Learning (UTQ Module)	Eindhoven Univ. of Technology
2022	Evaluation of Courses (UTQ Module)	Eindhoven Univ. of Technology
2022	Teaching Skills (UTQ Module)	Eindhoven Univ. of Technology
2022	Designing Courses & Projects (UTQ Module)	Eindhoven Univ. of Technology
2022	Facilitating Learning (UTQ Module)	Eindhoven Univ. of Technology
2021	Supervision of PhD Students	Eindhoven Univ. of Technology

Supervision and Thesis Evaluation

Co-supervisor for following students:

PhD

2021-Present	Danil Provodin	Constrained Sequential Learning (in collaboration with KPN)

MSc

2022-2023	Joost v.d. Haar	Supply Chain Management using ML (in collaboration with ASML)
2022-2023	Jiong Li	Exploration in Reinforcement Learning with Sparse Rewards
2022-2023	Wouter v. d. Wee	Curiosity-driven Fairness in Reinforcement Learning

Member of the thesis evaluation committee for following students:

MSc	Daan Roordink	Machine Learning more than Mean-Learning – On Multivariate Distributional Regression Techniques and Evaluation Metrics
MSc	Youri Vis	Effective Sampling in Intrinsically Motivated Reinforcement Learning
BSc	Adomas Repšys	Explanation of the Inconsistencies in the Performance of the Bias Mitigation Preprocessing Techniques
BSc	Shadiah Ricardo Lacouture	Justifying the Use of Fairness Pre-Processing Algorithms
BSc	Shahrukh Tufail	Auditing Recommender Models for Bias without Access to Sensitive Data

Professional Activities

Reviewer	JMLR, ICML, NeurIPS (Top Reviewer), AAAI, ICLR, ACM Conference on Fairness, Accountability, and Transparency
Program Committee	UAI (Top Program Committee Member 2022), ALT, IJCAI, ECML/PKDD, European Workshop on Reinforcement Learning

Projects

Feb 2021 - Present	Dutch Research Council (NWO) TOP TEPAIV project	Researcher
Feb 2018 - Jan 2021	CHIST-ERA project - Dynamically Evolving Long-Term Autonomy (DELTA)	Partner

Leadership and Outreach Roles

2022-Present	Academic Coach for the Honors Academy at Eindhoven University of Technology
2021-Present	Volunteer for the Diversity and Inclusion Task Force at Eindhoven University of Technology
2016-2017	Mentor to junior PhD students
2013-2014	Volunteer tutor for high school students from disadvantaged households
2013-2014	Student Head Coordinator for the Wellness and Outreach Initiative at Indian Institute of Technology Madras
2012-2014	Class Representative of MSc Computer Science class of 2014 at Indian Institute of Technology Madras

Invited Talks and Presentations

Nov 11, 2023	Tutorial on fair reinforcement learning at the 15th Asian Conference on Machine Learning at Istanbul (Turkey)
Aug 23, 2023	Presentation at the 32nd International Joint Conference on Artificial Intelligence 2023 at Macau (China)
Apr 13, 2023	Presentation at the 21st Symposium on Intelligent Data Analysis at Louvain-la-neuve (Belgium)
Sept 4, 2019	Invited talk at DeepMind, Google at London (UK)
Dec 28, 2018	Invited talk at IIT Madras, Department of Computer Science and Engineering at Chennai (India)
July 15, 2018	Presentation at the 5th Workshop on Fairness, Accountability, and Transparency in Machine Learning at Stockholm (Sweden)
July 14, 2018	Presentation at the 2nd workshop for Lifelong Learning: A Reinforcement Learning Approach at Stockholm (Sweden)
Nov 22, 2017	Invited talk at Montanuniversität Leoben, Lehrstuhl für Informationstechnologie at Leoben (Austria)
June 7, 2017	Invited talk at Heidelberg University, Statistical Natural Language Processing Colloquium at Heidelberg (Germany)
Dec 17, 2015	Invited talk at IIT Madras, Department of Computer Science and Engineering at Chennai (India)

Skills

Informatics

Programming	C, C++, Java, Python, MATLAB
ML tools	Tensorflow, Weka (Waikato Environment for Knowledge Analysis), RapidMiner
Misc.	LaTeX, Apache Subversion, HTML/CSS, OS: GNU/Linux, Windows

Languages

English Proficient **French** Intermediate **German** Elementary **Dutch** Elementary

Industry Experience

2009-2011 Infosys Information technology consulting company, *Systems Engineer*

Department of Mathematics and Computer Science, MF 7.100, Eindhoven University of Technology, 5612AP, Eindhoven, The Netherlands