Ramaravind Kommiya Mothilal

PhD Student, University of Toronto

🌐 ramaravind.com @ ram.mothilal@mail.utoronto.ca ⌂ GitHub 🎓 Google Scholar in ramaravindkm

Education

Present **Sep 2022**	**University of Toronto** PhD in Information	**Toronto, Canada**
Feb 2018 **Sep 2016**	**Katholieke Universiteit Leuven (KU Leuven)** MSc in Artificial Intelligence *(Engineering and Computer Science Specialization)* > **Percentage:** 76.81% (Magna Cum Laude)	**Leuven, Belgium**
May 2015 **July 2011**	**National Institute of Technology (NIT) Trichy** Bachelor in Instrumentation and Control Engineering > **CGPA:** 8.1/10 (First Class)	**Tiruchirappalli, India**

Experience

Jun 2022 **Mar 2021**	**Everwell Health Solutions** *Data Scientist | Mentor: Dr. Bill Thies* > Designed a systematic data hygiene framework to anticipate and remove sources of data bias in downstream ML tasks. > Developed indicators to evaluate and improve engagement of health providers to facilitate patient adherence to medications. > Built various dashboards with Power BI and Apache Superset for different stakeholders, including USAID and Central TB Division—Government of India.	**Bangalore, India**
Feb 2021 **Jan 2019**	**Microsoft Research | Center for Societal Impact through Cloud & AI** [🌐] *AI Center Fellow | Advisors: Dr. Amit Sharma, Dr. Joyojeet Pal* > Developed a general optimization framework— DiCE(Diverse Counterfactual Explanations)—to generate and evaluate a diverse set of hypothetical examples that show people how to obtain a different prediction. [**FAccT'20**] [⌂] [🌐] > Studied the complementarities of Feature Attribution and Counterfactual explanation methods to demonstrate the value of considering multiple kinds of model explanations. [**AIES'21**] > Studied how occupying (un)favourable positions in the politicians' social networks lead to discrimination and inequality in terms of both information received and propagation of new information, and showed how caste and celebrity capital manifest in social media activities of Indian politicians. [**CSCW'21**]	**Bangalore, India**
Dec 2020 **July 2018**	**Microsoft Research | Technology for Emerging Markets** [🌐] *Research Intern | Advisors: Dr. Amit Sharma*	**Bangalore, India**
Jul 2016 **Jul 2015**	**Royal Bank of Scotland (RBS) | Data Archival Team** *Analyst*	**Chennai, India**
Jul 2014 **May 2014**	**Indian Institute of Science | Computational Intelligence Lab** [🌐] *Research Intern | Advisors: Dr. S N Omkar*	**Bangalore, India**

Publications

P=In Press, C=Conference, W=Workshop, D=Demo/Poster, J=Journal

[C.12] **Towards a Non-Ideal Methodological Framework for Responsible ML** [🔗]
Ramaravind Kommiya Mothilal, Shion Guha, Syed Ishtiaque Ahmed
2024 CHI Conference on Human Factors in Computing Systems [**CHI'24**]

[C.11] **Devotees on an Astroturf: Media, Politics, and Outrage in the Suicide of a Popular FilmStar** [🔗]
Syeda Zainab Akbar, Ankur Sharma, Dibyendu Mishra, Ramaravind Kommiya Mothilal, Himani Negi, Sachita Nishal, Anmol Panda, Joyojeet Pal
ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies [**COMPASS'22**]

[C.10] **Caste Capital on Twitter: A Formal Network Analysis of Caste Relations among Indian Politicians** [🔗]
Ramaravind Kommiya Mothilal*, Palashi Vaghela*, Joyojeet Pal (* = Equal Contribution)
Proceedings of the ACM on Human-Computer Interaction (CSCW) [**CSCW'22**]

[C.9] **Voting with the stars: Analyzing Partisan Engagement between Celebrities and Politicians in India** [%]
Ramaravind Kommiya Mothilal, Dibyendu Mishra, Sachita Nishal, Faisal M. Lalani, Joyojeet Pal
Proceedings of the ACM on Human-Computer Interaction (CSCW) **[CSCW'22]**

[C.8] **Towards unifying feature attribution and counterfactual explanations: Different means to the same end** [%]
Ramaravind Kommiya Mothilal, Divyat Mahajan, Chenhao Tan, Amit Sharma
Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society, 652-663 **[AIES'21]**

[C.7] **Birds of a Caste-How Caste Hierarchies Manifest in Retweet Behavior of Indian Politicians** [%]
Palashi Vaghela*, Ramaravind Kommiya Mothilal*, Joyojeet Pal (* = Equal Contribution)
Proceedings of the ACM on Human-Computer Interaction **[CSCW'21]**

[C.6] **Using Mobile Airtime Credits to Incentivize Learning, Sharing and Survey Response: Experiences from the Field** [%]
Devansh Mehta, Ramaravind Kommiya Mothilal, Alok Sharma, William Thies, Amit Sharma
Proceedings of the 3rd ACM SIGCAS Conference on Computing and Sustainable Societies **[COMPASS'20]**

[C.5] **Topical Focus of Political Campaigns and its Impact: Findings from Politicians' Hashtag Use during the 2019 Indian Elections** [%]
Anmol Panda, Ramaravind Kommiya Mothilal, Monojit Choudhury, Kalika Bali, Joyojeet Pal
Proceedings of the ACM on Human-Computer Interaction **[CSCW1'20]**

[C.4] **Learnings from Technological Interventions in a Low Resource Language: A Case-Study on Gondi** [%]
Sebastin Santy, Devansh Mehta, Ramaravind Kommiya Mothilal, Brij Mohan Lal Srivastava, Alok Sharma, Anurag Shukla, Vishnu Prasad, Venkanna U, Amit Sharma and Kalika Bali
International Conference on Language Resources and Evaluation [Invited Submission @ LRE Journal] **[LREC'20]**

[C.3] **Explaining machine learning classifiers through diverse counterfactual explanations** [%]
Ramaravind Kommiya Mothilal, Amit Sharma, Chenhao Tan
Proceedings of the 2020 Conference on Fairness, Accountability, and Transparency **[FAccT'20]**

[C.2] **Optimizing peer referrals for public awareness using contextual bandits** [%]
Ramaravind Kommiya Mothilal, Amulya Yadav, Amit Sharman
Proceedings of the 2nd ACM SIGCAS Conference on Computing and Sustainable Societies **[COMPASS'19]**

[C.1] **Predicting first-year engineering student success: from traditional statistics to machine learning** [%]
Ramaravind Kommiya Mothilal, Tom Broos, Maarten Pinxten, Tinne De Laet
Proceedings of the 46th SEFI Annual Conference 2018 **[SEFI'18]**

[W.1] **Towards Unifying Feature Attribution and Counterfactual Explanations**
Ramaravind Kommiya Mothilal, Divyat Mahajan, Chenhao Tan, Amit Sharma
Workshop on Responsible AI, ICLR-21 [Spotlight Contributed Talk] **[RAI@ICLR'21]**

[D.3] **Facilitating Media Distribution with Monetary Incentives** [%]
Devansh Mehta, Alok Sharma, Ramaravind Kommiya Mothilal, Anurag Shukla, Vishnu Prasad, William Thies, Venkanna U, Colin Scott, Amit Sharma
Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems **[CHI'20]**

[D.2] **Learnings from an Ongoing Deployment of an IVR-based Platform for Voter Awarenesss** [%]
Ramaravind Kommiya Mothilal, Devansh Mehta, Alok Sharma, William Thies, Amit Sharma
Conference Companion Publication of the 2019 on Computer Supported Cooperative Work and Social Computing [a non-archival version won Outstanding Poster Award at COMPASS 2019] **[CSCW'19]**

[D.1] **The Appeal of Influencers to the Social Media Outreach of Indian Politicians** [%]
Faisal M Lalani, Ramaravind Kommiya Mothilal, Joyojeet Pal
Conference Companion Publication of the 2019 on Computer Supported Cooperative Work and Social Computing **[COMPASS'19]**

[J.1] **Scale adaptive object tracker with occlusion handling** [%]
Ramaravind Kommiya Mothilal, TR Shravan, SN Omkar
International Journal of Image, Graphics and Signal Processinge **[IJIGSP'16]**

Computing Skills

> **Operating System:** Windows, Linux
> **Database/Server:** MySQL, PostgreSQL, SQL Server
> **Language:** Python, R, C/C++, Java, HTML, CSS, JavaScript, PHP, SQL, Hadoop, Spark
> **Visualization Software/Tools:** Power BI, Apache Superset, Tableau

Software and Open-Source Contribution

> **DiCE: Diverse Counterfactual Explanations for Machine Learning** : Microsoft Research India - *commits*, *repository*

Awards

> **Data Sciences Institute Graduate Fellowship - C$75,000 - 2024-26**

> **Schwartz Reisman Institute for Technology and Society (SRI) Graduate Fellowship - C$7,500 - 2023-24**

Mentions and Coverages

> **"Dalit MPs less likely to be heard on Twitter than upper castes"** | The Times of India .... Oct 2020
> **"Birds of Brahmanical Feather Flock Together"** | The Wire .... Aug 2020
> **"DiCE: Diverse Counterfactual Explanations for Hotel Cancellations"** | Towards Data Science .... Jul 2020
> **"DiCE -ML models with counterfactual explanations for the sunk Titanic-"** | Analytics Vidhya ..... Mar 2020
> **"Open-source library provides explanation for machine learning through diverse counterfactuals"** |
> Microsoft Research Blog .... Jan 2020
> **"Elections 2019: What tweet for tat tells you about Rahul Gandhi"** | LiveMint .... Apr 2019

Talks

"Caste Capital on Twitter: A Formal Network Analysis of Caste Relations among Indian Politicians"
> Department of Management Studies, Indian Institute of Technology Delhi .... Jun 2022

"When Machine Learning meets Educational Science"
> Faculty of Psychology and Educational Sciences, KU Leuven .... Feb 2018
> Leuven Engineering and Science Education Center (LESEC) .... Mar 2018

Academic Service and Volunteering

Mentor	*2024 Responsible Tech Mentorship Program* by All Tech Is Human
Reviewer	CHI'24, DIS'24, ICLR-RAI'21 (Demo), TOCHI'22, GHTC'22
Reviewer & AC	CHI'24 Late Breaking Works
Reviewer & PC	COMPASS'22, COMPASS'21, XKDD'21
Section Leader	*Code in Place* by Stanford University

Teaching

Teaching Assistant, UofT	Computational Thinking (INF 1339), Programming for Data Science (INF 1340), Data Analytics (INF 2190), Data Modeling and Database Design (INF 1343), Human Values in Data Science (INF 2210), Computers and Society (CSC 300), Statistics for Data Science (INF 1344)
Workshop Presenter	Data Analysis with SQL and MySQL, iSkills Workshop at Faculty of Information, UofT (Fall 2022, Winter 2023, Fall 2023, Winter 2024)

References

> Dr. Ishtiaque Ahmed .... *Assistant Professor, Department of Computer Science, University of Toronto* [🌐]
> Dr. Shion Guha .... *Assistant Professor, Faculty of Information, University of Toronto* [🌐]
> Dr. Bill Thies .... *Co-Founder, Board Member and Technical Advisor at Everwell Health Solutions* [🌐]
> Dr. Amit Sharma .... *Principal Researcher, Microsoft Research India* [🌐]
> Prof. Joyojeet Pal .... *Associate Professor, School of Information, University of Michigan* [🌐]
> Prof. Chenhao Tan .... *Assistant Professor, Department of Computer Science, University of Chicago* [🌐]
> Prof. Tinne De Laet .... *Associate Professor, Department of Computer Science, KU Leuven* [🌐]