RAJAGOPAL VENKAT

r.venkatesaramani@northeastern.edu | venkat.prof

Research interests

1. Data Privacy
2. Artificial Intelligence & Machine Learning
3. Complex Networks
4. Natural Language Processing

Pedagogical focus

1. Enabling setup-free interactivity at scale
2. Visualization-driven course design

Work Experience

Assistant Teaching Professor 2023-Present
Khoury College, Northeastern University

Instructor 2016
Learning and Academic Support Center, Shiv Nadar University

Software Engineering Intern 2016
Dell International Services, Hyderabad, India

Software Engineering Intern 2015
HCL Technologies, Noida, India

Education

Ph.D. Computer Science Aug 2023
Washington University in St. Louis

- Thesis: Honesty Is Not Always the Best Policy: Defending Against Membership Inference Attacks on Genomic Data
- *Advisor - Dr. Yevgeniy Vorobeychik*

M.S. Computer Science Jan 2021
Washington University in St. Louis

B.Tech. Computer Science (Minor Mathematics) May 2017
Shiv Nadar University, India

- *Founding Chair, ACM SNU Chapter*

Publications

Journals

1. **Venkatesaramani, Rajagopal, et al.** "*Defending against membership inference attacks on Beacon services.*" ACM Transactions on Privacy and Security 26.3 (2023): 1-32.

2. **Venkatesaramani, Rajagopal, et al.** "*Enabling trade-offs in privacy and utility in genomic data beacons and summary statistics.*" Genome Research (2023): gr-277674. (Extended Abstract. RECOMB, 2023)

3. **Venkatesaramani, Rajagopal, Bradley A. Malin, and Yevgeniy Vorobeychik.** "*Re-identification of individuals in genomic datasets using public face images.*" Science Advances 7.47 (2021): eabg3296.

Conferences

1. **Zhu, Shaotong, ..., [Venkatesaramani, Rajagopal] et al.**, "*CribNet: Enhancing Infant Safety in Cribs through Vision-based Hazard Detection*" 18th International Conference on Automatic Face and Gesture Recognition (FG). 2024.

2. **Venkatesaramani, Rajagopal, et al.** "*A semantic cover approach for topic modeling.*" Proceedings of the Eighth Joint Conference on Lexical and Computational Semantics (***** SEM 2019). 2019.

3. **Bharadwaj, Ashwin, Zhang, Anio and Venkatesaramani, Rajagopal**. "*Shapeshifting Coloring Problems.*", Model AI Assignments, EAAI 2025

Preprints

1. **Zhang, Tao, [Venkatesaramani, Rajagopal], et al.**, "*A Game-Theoretic Approach to Privacy-Utility Tradeoff in Sharing Genomic Summary Statistics*", arXiv preprint arXiv:2406.01811 (2024).

2. **Zhang, Tao, [Venkatesaramani, Rajagopal], et al.** "*Bayes-Nash Generative Privacy Against Membership Inference Attacks*" arXiv preprint arXiv:2410.07414 (2024)

3. **Venkatesaramani, Rajagopal, and Yevgeniy Vorobeychik.** "*Community detection by information flow simulation.*" arXiv preprint arXiv:1805.04920 (2018).

Pedagogy

1. **Venkatesaramani, Rajagopal**, "*Notes on Artificial Intelligence.*" Self-hosted, digital. Access at venkat.prof/resources/AI

Media Coverage of Research

1. New Scientist - Nov 17, 2021
2. GenomeWeb - Nov 17, 2021, Nov 19, 2021
3. McKelvey School of Engineering, WashU - Nov 17, 2021
4. MedCity News - Nov 04, 2022
5. NewsWise - Nov 18, 2021
6. TechXplore - Nov 18, 2021
7. Technology Networks - Nov 19, 2021
8. EurekAlert, AAAS - Nov 18, 2021
9. MedicalXpress - Nov 19, 2021
10. AZO Life Sciences - Nov 19, 2021
11. Mirage News - Nov 23, 2021

Courses Taught

1. **CS4973: Special Topics - Network Analysis.** Spring '25, Northeastern University
2. **CS6120: Natural Language Processing.** Spring '24, Northeastern University
3. **CS5100: Foundations of AI.** Fall '23, Spring '24, Fall '24, Spring '25, Summer 1 '25, Northeastern University
4. **CS4100: Artificial Intelligence.** Fall '23, Spring '24, Summer 2 '24, Fall '24, Summer 1 '25, Fall '25, Northeastern University
5. **CSD201: Data Structures & Algorithms.** Fall '16, LASC, Shiv Nadar University
6. **CSD101: Intro to CS & Programming.** Spring '16, LASC, Shiv Nadar University

Invited Presentations

1. **Workshop on Ethical AI Foundations.** HackBeanpot hackathon, Northeastern University, 2025
2. **Trends in AI Research.** CS3950: Introduction to Computer Science Research, Northeastern University, 2025

3. **AI and Data Privacy.** CS3950: Introduction to Computer Science Research, Northeastern University, 2024
4. **A Game Theoretic Approach to Optimal Privacy-Utility Tradeoffs in Genomic Summary Statistics.** [POSTER] NSF-TIH Annual PI Meeting, 2023
5. **Small World Networks.** Northeastern University, 2022
6. **Re-identification from face images is harder than you think.** NIH CEER (GetPreCiSe @ Vanderbilt University), Annual Meeting 2021
7. **Data Privacy.** CS411A: AI & Society, Washington University in St. Louis, 2020
8. **Networks in AI.** CSE416A: Analysis of Network Data, Washington University in St. Louis, 2019 & 2022
9. **Small World Networks.** CSE416A: Analysis of Network Data, Washington University in St. Louis, 2019 & 2022
10. **Random Graphs.** CSE416A: Analysis of Network Data, Washington University in St. Louis, 2019 & 2022
11. **The TLDR Version - Topic Modeling for Short Texts**, Doctoral Student Seminar, Washington University in St. Louis, 2019
12. **Re-identification in Genomic Datasets from Public Face Images.** Doctoral Student Seminar, Washington University in St. Louis, 2020
13. **No One Cares that you are 5.7% Latvian; Except You**, GetPreCiSe NIH CEER, Vanderbilt University, 2017
14. **Django Unchained.** Dell International Services, Hyderabad, India, 2016

Reviewing Activity

- Genome Biology, *2025*
- ITiCSE, *2025*
- ICLR, *2025*
- AAMAS, *2025* (*session chair*), *2026*
- ACM SIGCSE Technical Symposium, *2024* (*Judge for ACM student research competition*), *2025, 2025*
- Educational Advances in AI (EAAI), *2024, 2026*
- Nature Computational Science, *2024*

- IEEE Transactions on Knowledge and Data Engineering (TKDE), *2022, 2023*
- CV4Smalls, *2023*
- ACM/IEEE Conference on Internet of Things Design and Implementation (IoTDI) [sub-reviewer], *2022*
- Artificial Intelligence Review (AIRE), *2018, 2019, 2022*
- Machine Learning (MACH, Springer), *2020, 2021*
- NeurIPS [sub-reviewer], *2023*
- Uncertainty in Artificial Intelligence (UAI) [sub-reviewer], *2022*

Professional Memberships

1. Association for Computing Machinery, *2015-2016, 2023-Present*
2. ACM Special Interest Group on CS Education (SIGCSE), *2022-Present*
3. AAAI, *2019-2020*

University Service

1. Faculty Advisor, ACM Northeastern University Chapter. 2024 - present.
2. Faculty Advisor, Khoury College Graduate Robotics Club. 2024 - present.
3. Faculty Advisor, Automotive Club, Northeastern University. 2024 - present.
4. Khoury College Teaching Faculty Hiring Committee. 2024-25.
5. Khoury College MS AI Curriculum Committee. 2025 - 26.
6. Khoury College Graduate Academic Integrity Committee. 2024-present.
7. Working Group on *supporting peer learning and collaboration for teaching and education innovation*, 2023-24
8. Boston Public Schools outreach efforts: demos to visiting student groups, 2023
9. NUSanskriti - invited panelist, technical panel on AI, Feb 2024

Student Advising

MS Students

- Zhou Fang, 2024, Khoury Graduate Research Apprenticeship, **M.S. Thesis**
- Amal Matthew, 2023-24, **M.S. Thesis**, co-advised with Prof. Sarah Ostadabbas
- Kevin Zyskowski, 2024-25, **M.S. Thesis**
- Aditya Ratan Jannali, 2024-25, **M.S. Thesis**
- Keeyon Hajjafar, 2024, **M.S. Project**, co-advised with Prof. Jeffrey Lipton, MIE
- Chainathan Santhanam Sudhakar, 2025, **M.S. Project**
- Andrew Sayegh, 2024-25, **M.S. Project**
- Kishore Sampath, 2025, **M.S. Project**
- Xiangzhi Li, 2025, **M.S. Project**
- Joseph Defendre, 2025, **M.S. Project**
- Jacob Krucinski, 2025, **M.S. Project**, co-advised with Prof. Alireza Ramezani
- Esakkivel Esakkiraja, 2025, **M.S. Project**
- Bhavana Rajan Nair, 2024-25, independent research, **M.S. Thesis Committee**
- Ashwin Bharadwaj, 2024, independent research, **M.S. Thesis Committee**
- Prajjwal Gupta, 2024-25, independent research
- Anio Zhang, 2024-25, independent research
- Rushali Mohbe, 2024, independent research

Undergraduate Students

- Mario Fabado Gómez-Lobo, Spring 2024, Undergraduate Capstone
  Algorithm Visualizer Tool: Clairvoyant
- Armand Meskin, Fall 2023, independent research
- Casey Goyette, 2024, PEAK Summit Grant awardee - RL and robotics
- Ditte Isak, 2024, PEAK Summit Grant awardee - RL and robotics
- Yulan Wang, RISE
- Yulia Buturlia, RISE
- Yash Jayaprakash, RISE