

# Tara V. Anand

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## EDUCATION

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**Columbia University, Department of Biomedical Informatics, New York, NY** *Sept 2020—Feb 2026*

Ph.D. in Biomedical Informatics

Dissertation: Coarse Graphical Representations for Causal Inference with High-Dimensional Clinical Data

Advisors: George Hripcsak and Elias Bareinboim

**Barnard College of Columbia University, New York, NY**

*Sept 2016—May 2020*

B.A. in Computer Science and Middle Eastern and Asian Cultures

*Cum Laude, Departmental Honors for Computer Science, Dean's List*

## PEER-REVIEWED PUBLICATIONS

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1. **Anand TV**, Ribeiro AH, Tian J, Hripcsak G, Bareinboim E. “Causal Discovery over Clusters of Variables in Non-Markovian Systems”, *Advances in Neural Information Processing Systems*. 2026 [In press, Spotlight presentation].
  2. Chen HY, Falconer T, Ostropolets A, **Anand TV**, ..., Suchar MA, Hripcsak G. “Heterogeneity of Treatment Effects Across Nine Glucose-Lowering Drug Classes in Type 2 Diabetes: Extension of the LEGEND-T2DM Network Study.” *Diabetes, Obesity, and Metabolism*. 2026 Aug;28(8):7321-41.
  3. Desvarieux M, Rundek T, Ahsan H, ..., **Anand TV**, ... Mayeux R, Hripcsak G. “Accelerating real-world prediction and research in Alzheimer’s: The M3AD study.” *Alzheimer’s & Dementia*. 2026;22:e71174.
  4. **Anand TV**, Ribeiro AH, Tian J, Hripcsak G, Bareinboim E. “Causal Discovery over Clusters of Variables in Markovian Systems”. *Advances in Neural Information Processing Systems*. 2025;38:86792-819.
  5. Bear Don’t Walk O, Haldar S, Wei D, ..., **Anand TV**, ... Lucero R, Bright TJ. “Developing and sustaining inclusive language in biomedical informatics communications: an AMIA Board of Directors endorsed paper on the Inclusive Language and Context Style Guidelines”, *Journal of the American Medical Informatics Association*. 2025 Aug, 32 (8) 1380-7.
  6. **Anand TV**, Hripcsak G. “Leveraging Cluster Causal Diagrams for Determining Causal Effects in Medicine.” *AMIA Annu Symp Proc*. 2025 May 22;2024:134-141. PMID: 40417561; PMCID: PMC12099438. [2<sup>nd</sup> Place Student Paper Competition]
  7. Khera R, Aminorroaya A, Dhingra L, ... **Anand TV**, ... Hripcsak G, Suchard MA. “Comparative Effectiveness of Second-Line Antihyperglycemic Agents for Cardiovascular Outcomes: A Multinational, Federated Analysis of LEGEND-T2DM.” *JACC*. 2024 Sep, 84 (10) 904–917.
  8. **Anand TV**, Bu F, Schuemie MJ, Suchard MA, Hripcsak G. “Comparative safety and effectiveness of angiotensin converting enzyme inhibitors and thiazides and thiazide-like diuretics under strict monotherapy.” *J Clin Hypertens*. 2024; 1-6.
  9. **Anand TV**, Ribeiro AH, Tian J, Bareinboim E. “Causal Effect Identification in Cluster DAGs.” *Proceedings of the AAAI Conference on Artificial Intelligence*. 2023 Jun 26;37(10):12172–9. [Oral presentation]
  10. **Anand TV**, Wallace BK, Chase, HS. “Prevalence of potentially harmful multidrug interactions on medication lists of elderly ambulatory patients.” *BMC Geriatrics* 21, 648 (2021).
  11. Fransen PR, **Anand TV**, Garcia SM. “Determining user segmentation based on a photo library.” (U.S. Patent No. 11,036,786). *U.S. Patent and Trademark Office*.

## PRE-PRINTS AND IN-PREPARATION

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1. Melville E, Wright MA, Akhtar S, **Anand TV**, Wright RN. “Integrating Undergraduate Computing Peer Mentors within the Pedagogical Team: A Multi-Case Study on Computing Fellows across Disciplines.” 2026 [*Under review*].
2. Hripcsak G, **Anand TV**, Chen HY, Zhang L, Chen Y, Suchard MA, Ryan PB, Schuemie MJ. “Bias and Variance of Adjusting for Instruments.” 2026 [*Preprint*].
3. Chen HY, Knoll C, Boverter E, Pratt N, **Anand TV**, Black A, Zandt MV, Ryan P, Hripcsak G. “The Role of Drug Indication on Incidence Rate Heterogeneity: A Large-Scale Systematic Evaluation Across an International Network of Observational Databases”, Oct 2025 [*Preprint, Under review*].
4. Chen HY, **Anand TV**, Zhang L, and Hripcsak G. “When Does IPCW Help? Simulation and Real-World Evidence on Censoring Adjustment in Survival Analysis”. medRxiv, Sept 2025 [*Preprint, Under review*].

## CONFERENCE POSTERS, LIGHTNING TALKS, AND WORKSHOP ORGANIZATION

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1. **Anand TV**, Chen HY, Bareinboim E, Hripcsak G. “Clusters for Causal Discovery Over High-Dimensional Biomedical Data.” Accepted for: *American Medical Informatics Association 2026 Annual Symposium*; 2026 Nov 8-11; Dallas TX. [Podium Talk].
2. Chen HY, Falconer, T, Ostropolets A, **Anand TV**, Jiang X, Dávila-García D, Zhang L, Fan R, Hripcsak G. “Heterogeneity of Treatment Effects Across Nine Glucose-Lowering Drug Classes in Type 2 Diabetes: Extension of the LEGEND-T2DM Network Study”. Presented at: *Observational Health Data Sciences and Informatics Global Symposium*. 2025 [Lightning Talk]
3. **Anand TV**, Ribeiro AH, Tian J, Bareinboim E, Hripcsak G. Causal Effect Identification in Cluster Directed Acyclic Graphs. Presented at: National Library of Medicine Informatics Training Conference; 2023 June 21-23; Palo Alto, CA. [Poster]
4. **Anand TV**, Suchard MA, Hripcsak G. Reproducibility in comparative effectiveness and safety of ACE inhibitors and thiazides for modified monotherapy treatment criteria. Presented at: *American Medical Informatics Association 2022 Annual Symposium*; 2022 Nov 5-9; Washington D.C. [Poster]
5. Bear Don’t Walk IV O, Pichon A, Volpe S, Liu LG, Desai PM, **Anand TV**, Richter L, Schiffer K, Massey B. A Workshop to Build a Research Agenda for Justice Informatics. Facilitated at: *American Medical Informatics Association 2022 Annual Symposium*; 2022 Nov 5-9; Washington D.C. [Workshop]
6. Desai PM\*, **Anand TV\***, Mamykina L. Towards Personalized Meal Recommendations for Type II Diabetes Self-Management. Presented at: *National Library of Medicine Informatics Training Conference*; 2022 June 22-24; Buffalo, NY. [Poster, *Finalist for Best Poster*]
7. Desai PM\*, **Anand TV\***, Mamykina L. MedMessages: A Chatbot for Chemotherapy Management and Symptom Reporting. Presented at: *American Medical Informatics Association 2021 Annual Symposium*; 2021 Oct 30-Nov 3; San Diego, CA, NY. [Podium Presentation, *Finalist for Student Design Challenge*]
8. **Anand TV**, Liu C, Chung WK, Weng C. Characterization of Dispersed Rare Disease Phenotypes in EHR Narratives. Presented at: *National Library of Medicine Informatics Training Conference*, 2021 June 21-23; Online. [Lightning Talk]
9. **Anand TV**, Wallace BK, Chase HS. Prevalence of Potential Multi-Drug Interactions in Ambulatory Patients. Presented at: *American Medical Informatics Association 2020 Annual Symposium*; 2020 Nov 14-18; Online. [Poster]

## GUEST LECTURES AND INVITED TALKS

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1. *Partial Knowledge and Causal Discovery for Causal AI*  
Columbia University x Bloomberg, Machine Learning Summer School. June 17, 2026.
2. *Causal Artificial Intelligence*  
Rober H. Smith School of Business, University of Maryland. Harnessing AI for Business, April 6, 2026
3. *Population-Level Effect Estimation: Applications to Generate Reliable Real-World Evidence*  
Advanced Tutorials for OHDSI Global Symposium, October 8, 2025
4. *Causal Inference for Observational Data*  
Department of Statistics, Columbia University. Undergraduate Statistics Seminar, October 3, 2025
5. *Graphs for Causal Inference Over Groups*  
Department of Math and Statistics, Haverford College. Math/Stats Colloquium. September 8, 2025.
6. *Equivalence Classes of Causal Diagrams (Structure Learning and Coarse Representations)*  
Department of Computer Science, Columbia University. Special Topics: Causal Inference II, April 28 2025.
7. *Careers in Biomedical Informatics*  
BioBus: Columbia Zuckerman Institute, Columbia University. March 25, 2024.
8. *Introduction to Causal Inference: Causal Diagrams and Do-Calculus*  
Department of Biomedical Informatics, Columbia University. Machine Learning for Healthcare, April 11, 2023.
9. *Cluster DAGs for Causal Effect Identification in High-Dimensional Domains*  
Department of Biomedical Informatics, Columbia University. Research Seminar, April 10, 2023
10. *Combining Knowledge and Data Using Informatics, Statistics and Physics: Cluster Causal Diagrams for Identification of Causal Effects*  
American Medical Informatics Association 2022 Annual Symposium, Washington D.C. November 7, 2022.
11. *Effect Identification in Cluster Causal Diagrams*  
Causality Discussion Group, Online. August 17, 2022.
12. *Cluster Causal Diagrams for Causal Inference*  
Department of Biomedical Informatics, Columbia University. Summer Research Fellowship Program, August 3, 2022.
13. *Research in Biomedical Informatics: Detecting multi-drug interactions and Causal Inference in High-Dimensional Settings*  
BioBus: Columbia Zuckerman Institute, Columbia University. March 6, 2022.

## TEACHING EXPERIENCE

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### Academic Teaching

1. *Instructor, Generating Real-World Evidence in Medicine* [Graduate] Fall 2026  
Department of Biomedical Informatics, Columbia University, New York, NY
2. *Coordinator & Lecturer, Computing Fellows Program* [Undergraduate] Spring 2023—Summer 2026  
Computational Sciences Center, Barnard College, New York, NY
3. *Teaching Assistant, Computational Methods: Machine Learning for Healthcare* [Graduate] Spring 2023  
Department of Biomedical Informatics, Columbia University, New York, NY
4. *Teaching Assistant, Research Methods: Analysis for Large Scale Datasets* [Graduate] Spring 2022

Mailman School of Public Health, Columbia University, New York, NY

5. *Teaching Assistant, Symbolic Methods: Symbolic AI for Healthcare* [Graduate] *Fall 2021*  
Department of Biomedical Informatics, Columbia University, New York, NY
6. *Teaching Assistant, Computing in Context: Health Policy and Management* [Graduate] *Fall 2021*  
Mailman School of Public Health, Columbia University, New York, NY
7. *Lecturer & Assistant, Big Data, Machine Learning, and Real-World Applications* *Summer 2020*  
Pre-College Programs, School of Professional Studies, Columbia University, New York, NY
8. *Teaching Assistant, Data Structures and Algorithms* [Undergraduate] *Spring 2020, Summer 2019*  
Department of Computer Science, Columbia University, New York, NY
9. *Teaching Assistant, Introduction to Computer Science in Java* [Undergraduate] *Fall 2019*  
Department of Computer Science, Columbia University, New York, NY
10. *Instructor, Jumpstart for Aspiring Developers and Entrepreneurs* [Undergraduate] *Winter 2019*  
Undergraduate Student Life, Columbia University, New York, NY
11. *Instructor, Girls Who Code* *Summer 2018, Spring 2017*  
Adobe Systems, San Jose, CA & Girls Who Code, Columbia University, New York, NY

### Community-Engagement Teaching

12. *Tutor, Ruhi Institute Study Circles* [Youth & Adult Learners] *Spring 2020—present*  
Northeast Regional Training Institute New York, NY and Philadelphia, PA
13. *Animator, Ruhi Institute, Junior Youth Group* *Spring 2019—present*  
Northeast Regional Training Institute New York, NY and Philadelphia, PA

### EDITORIAL ACTIVITIES – Peer Reviewer

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|---------------------------------------------------------------------|---------------------|
| <i>Statistics in Medicine</i>                                       | <i>2026—present</i> |
| <i>Journal of Causal Inference</i>                                  | <i>2025—present</i> |
| <i>Journal of the American Medical Informatics Association</i>      | <i>2022—present</i> |
| Reviewer (2024-present), Student Editorial Board Member (2022-2024) |                     |

### SERVICE

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|------------------------------------------------------------------------------------------------------------|---------------------|
| <i>Regional Coordinator, Northeast Regional Training Institute</i>                                         | <i>2023—present</i> |
| <i>Student Volunteer, OHDSI Global Symposium</i>                                                           | <i>2023—present</i> |
| <i>Student Representative, Department of Biomedical Informatics, Columbia University</i>                   | <i>2022—2024</i>    |
| <i>National Library of Medicine Trainee Meeting Planning Committee Member, Columbia University</i>         | <i>2022—2023</i>    |
| <i>DEI Committee Member, Department of Biomedical Informatics Columbia University</i>                      | <i>2022—2023</i>    |
| <i>Justice Informatics Working Group Member, Department of Biomedical Informatics, Columbia University</i> | <i>2020—2023</i>    |
| <i>Student Volunteer, Machine Learning for Healthcare Conference</i>                                       | <i>2023</i>         |
| <i>Barnard BEARS (Better, Enhance and Advance Research Series) Mentor, Barnard College</i>                 | <i>2020—2021</i>    |
| <i>Application Development Initiative Mentor, Columbia University</i>                                      | <i>2018—2019</i>    |
| <i>EVE (Entrepreneurship Via Exploration) Coordinator and Mentor, Columbia University</i>                  | <i>2017—2019</i>    |

## **HONORS AND AWARDS**

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|---------------------------------------------------------------------------------------------------------|--------------------|
| American Medical Informatics Association Edward H. Shortliffe Doctoral Dissertation Award (First place) | <i>2026</i>        |
| Second Place Awardee, American Medical Informatics Association Student Paper Competition                | <i>2024</i>        |
| Top 5 Finalist, American Medical Informatics Association Student Design Competition                     | <i>2021</i>        |
| Grace Lee Boggs Bold Award for Coalition Building, Barnard College of Columbia University               | <i>2020</i>        |
| Departmental Honors in Computer Science, Barnard College of Columbia University                         | <i>2020</i>        |
| Bear Pin Awardee, Barnard College of Columbia University                                                | <i>2020</i>        |
| Student Leadership Award Recipient, Barnard College of Columbia University                              | <i>2019</i>        |
| Clare Boothe Luce Scholar, Barnard College of Columbia University                                       | <i>2019</i>        |
| Deans' List, Barnard College of Columbia University                                                     | <i>2016 – 2020</i> |