Tara V. Anand

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EDUCATION

Columbia University, Department of Biomedical Informatics, New York, NY *08/2020 – present*
Ph.D. in Biomedical Informatics GPA: 4.14/4.00
Advisors: George Hripcsak and Elias Bareinboim

Barnard College of Columbia University, New York, NY *09/2016 – 05/2020*
B.A. in Computer Science and Middle Eastern and Asian Cultures GPA: 3.80/4.00
Cum Laude, Departmental Honors for Computer Science, Dean's List

PUBLICATIONS & PREPRINTS

Anand TV, Ribeiro AH, Tian J, Bareinboim E. Effect Identification in Cluster Causal Diagrams. Published online February 22, 2022. https://doi.org/10.48550/arXiv.2202.12263

Anand TV, Wallace BK, Chase, HS. Prevalence of potentially harmful multidrug interactions on medication lists of elderly ambulatory patients. BMC Geriatr 21, 648 (2021). https://doi.org/10.1186/s12877-021-02594-z

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.

CONFERENCE PRESENTATIONS AND POSTERS

Anand TV, Suchard MA, Hripcsak G. Reproducibility in comparative effectiveness and safety of ACE inhibitors and thiazides for modified monotherapy treatment criteria. To be presented at: American Medical Informatics Association 2022 Annual Symposium; 2022 Nov 5-9; Washington D.C. [Poster]

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. To be facilitated at: American Medical Informatics Association 2022 Annual Symposium; 2022 Nov 5-9; Washington D.C. [Workshop]

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*]

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*]

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. [Tech Talk Presentation]

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]

RESEARCH & WORK EXPERIENCE

Undergraduate Researcher, Clare Boothe Luce Scholar *(Mentor: Herbert Chase, MD, MS)* *05/2019 – 06/2020*
Department of Biomedical Informatics, Columbia University Medical Center, New York, NY
- Researching physician prescribing behaviors through analysis of patient electronic health records and databases from the Observational Health Data Science and Informatics distributed data network standardized to a common data model
- Performed network analysis on graphical representations of patient prescriptions and drug interactions
- Leveraged RxNorm and other drug databases to map interactions to classes
- Developed algorithms in Python and MySQL to reconcile drug-use timelines, identified concurrent use with >2 day overlap and mapped to clinical decision support alert system's DDI database to determine prevalence and DDI severity

Undergraduate Researcher *(Principal Investigator: Gail Kaiser, PhD)* *09/2018 – 05/2019*
Programming Systems Lab, Columbia University, New York, NY
- Implemented control-flow analysis in HitoshiIO, a behavioral-code-similarity detector for Java methods
- Researched performance of different similarity metrics, de-compilers, and methods of data-flow and control-flow analysis

Computer Scientist Intern *(Supervisor: Peter Fransen)* *05/2018 – 08/2018*
Adobe Systems, San Jose, CA
- Researched methods of gathering insights for user segmentation

- Wrote algorithms to analyze associations between image metadata and user characteristics
- Developed novel method of utilizing supervised ML algorithms that preserve privacy by localizing sensitive information to a user's device
- Developed iOS App in Swift to process image metadata from users' photo library and highlight significant images
- Patented research "Determining User Segmentation Based on a Photo Library", U.S. Patent No. 11,036,786

Data Science/Computer Science Intern *(Supervisor: Michael Heller)* *05/2017 – 08/2017*
IBM, North Castle, NY
- Investigated generating standardized, accurate labels for large datasets through training machine learning NLP models in Watson Knowledge Studio and BlueMix's Natural Language Classifier
- Created an ontology to eliminate redundancies and stratify potential labels within logical groups, establishing the type system for the NLP model
- Developed a structured pipeline for integrating feedback from subject matter experts into the NLP model
- Developed a dashboard to analyze project metrics in NodeRED

Student Researcher *(Mentor: Diane Kamen MD, MSCR)* *06/2015 – 08/2015*
Medical University of South Carolina, Charleston, SC
"Gene x Environment Interactions in Systemic Lupus Erythematosus: Polymorphisms in ITGAM and Smoke Exposure among African Americans"
- Evaluated associations between two single nucleotide polymorphisms in the gene ITGAM and passive exposure to smoke during childhood in a population of African-American women with systemic lupus erythematosus
- Performed polymerase chain reaction tests

TEACHING EXPERIENCE

Computational Methods: Machine Learning for Healthcare [Graduate], Teaching Assistant *Spring 2023*
Department of Biomedical Informatics, Columbia University, New York, NY
Professor: Amelia Averitt, MPH, MA, PhD

Research Methods: Analysis for Large Scale Datasets [Graduate], Teaching Assistant *Spring 2022*
Mailman School of Public Health, Columbia University, New York, NY
Professor: Zohn Rosen, PhD

Symbolic Methods [Graduate], Teaching Assistant *Fall 2021*
Department of Biomedical Informatics, Columbia University, New York, NY
Professor: Chunhua Weng, PhD

Computing in Context: Health Policy and Management [Graduate], Teaching Assistant *Fall 2022,*
Mailman School of Public Health, Columbia University, New York, NY *Fall 2021*
Professors: Stephen Coussens, PhD, Adam Canon PhD

Big Data, Machine Learning, and Their Real World Applications [High School], Teaching Assistant & Lecturer *Summer 2020*
Pre-College Programs, School of Professional Studies, Columbia University, New York, NY
Professor: Orthi Rabbane, MS

Data Structures and Algorithms [Undergraduate], Teaching Assistant *Spring 2020,*
Department of Computer Science, Columbia University, New York, NY *Summer 2019*
Professor: Paul Blaer, PhD

Introduction to Computer Science in Java [Undergraduate], Teaching Assistant *Fall 2019*
Department of Computer Science, Columbia University, New York, NY
Professor: Paul Blaer, PhD

Jumpstart for Aspiring Developers and Entrepreneurs (JADE) [Undergraduate], Coordinator and Instructor *Winter 2019*
Undergraduate Student Life, Columbia University, New York, NY

Girls Who Code [High School], Instructor *Summer 2018,*
Adobe Systems, San Jose, CA & Girls Who Code, Columbia University, New York, NY *Spring 2017*

General Chemistry Lab [Undergraduate], Teaching Assistant *Fall 2017*
Department of Chemistry, Barnard College, New York, NY
Professor: Jacob Alexander, PhD

HONORS AND AWARDS

Grace Lee Boggs Bold Award for Coalition Building	*2020*
Departmental Honors in Computer Science, Barnard College of Columbia University	*2020*
Bear Pin Awardee	*2020*
Student Leadership Award Recipient	*2019*
Clare Boothe Luce Scholar	*2019*
Deans' List, Barnard College of Columbia University	*2016 – 2020*