Curriculum Vitae – Darakhshan J. Mir

Research Interests

Societal Impacts of Computing: algorithmic decision-making in the carceral system, privacy; ethical implications of computing; fairness when learning from data.
Computer Science pedagogy: diversity and access in the computing curriculum; ethics and the computing curriculum; designing interdisciplinary computing courses.

Contact Information

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Employment and Affiliations

Bucknell University, Lewisburg, PA:

- Associate Professor of Computer Science, Fall 2022 – present.
- Assistant Professor of Computer Science, Fall 2015 – Spring 2022.

Center for Democracy & Technology, Washington, DC, Non-residential Fellow, Fall 2022 – present

Data & Society Research Institute, NY, NY:

- Affiliate, Fall 2018 – present.
- Faculty Fellow, Fall 2017 – Spring 2018.

Wellesley College, Wellesley, MA, Norma Wilentz Hess Fellow and Assistant Professor of Computer Science, Fall 2013 – Spring 2015.

Education

Ph.D., Computer Science, Rutgers University, 2013
Dissertation: *Differential Privacy: An Exploration of the Privacy-Utility Landscape*
Adviser: Rebecca N. Wright

M.S., Computer Science, The George Washington University, 2006.
Thesis: *Related-key cryptanalysis of DES*
Adviser: Poorvi L. Vora

B.Tech. Computer Science and Engineering, National Institute of Technology, Silchar, India, 2004.

Fellowships

Non-Residential Fellow at Center for Democracy & Technology, Washington, DC, 2022 - present.

Class of 2017 Data & Society Fellowship at Data & Society Research Institution, Fall 2017 - Summer 2018.

Jane W. Griffith Faculty Fellowship at Bucknell University, Fall 2015 – Summer 2018. Established by Jane W. Griffith, Class of 1943, Buknell University, in 2005. "Fellowship grants from this fund are awarded to superior newly hired faculty to support their research and professional academic development."

Norma Wilentz Hess Fellowship at Wellesley College, Fall 2013 – Spring 2015. Established by Norma Wilentz Hess, Class of 1941, Wellesley College to enable hiring of "outstanding young researchers in fields of current interest" in the Department of Computer Science at Wellesley College.

SCHOLARSHIP

Open Access Public-Facing Scholarship

1. **Darakhshan J. Mir**, Vanessa Massaro, Terrell Mosley, Nathan C. Ryan "Countering the Datafied Carceral State."In press, for the peer-reviewed, Open-access public scholarship project on *Keywords on The Datafied State, to be published by the Data & Society Research Institute, NY, NY, 2023.*https://datasociety.net/announcements/2022/10/24/keywords-on-the-datafied-state/
2. Jessie Daniels, Mutale Nkonde, and **Darakhshan Mir**. Advancing racial literacy in tech. Report of the Data & Society Fellowship Program (2019). https://datasociety.net/library/advancing-racial-literacy-in-tech/

Peer-reviewed Articles In Press

3. Swarup Dhar[1], Vanessa Massaro, **Darakhshan J. Mir**, Nathan Ryan, Uncertainty in Criminal Justice Algorithms: simulation studies of the Pennsylvania Additive Classification Tool. Accepted and in press. *In Proceedings of The American Mathematical Society's Short Course on Mathematical and Computational Methods for Complex Social Systems, 2023.*

Peer-reviewed Articles In Review

4. Swarup Dhar[1], Vanessa Massaro, **Darakhshan J. Mir**, Nathan Ryan, Analysis of A Carceral Algorithm - the Pennsylvania Additive Classification Tool: Biases and Important Features. Under Review. *In The Association of Computing Machinery (ACM) Conference on Fairness, Accountability, and Transparency (FAccT), 2023.*

Book Chapters and Journal Articles

5. Howley, Iris, **Darakhshan J. Mir** and Evan M. Peck. "Integrating AI ethics across the computing curriculum." *The Ethics of Artificial Intelligence in Education: Practices, Challenges, and Debates. Routledge, 2022. 255-270.*
6. Vanessa A. Massaro, Swarup Dhar[1], **Darakhshan J. Mir** and Nathan C. Ryan. "Carceral Algorithms and the History of Control: An Analysis of the Pennsylvania Additive Classification Tool." *Big Data and Society* 9, no. 1 (2022): 20539517221094002.

[1] Bucknell Undergraduate student at the time the research was performed.

7. **Darakhshan J. Mir.** Designing for the Privacy Commons. *Governing Privacy in Knowledge Commons, edited by Madelyn Rose Sanfilippo et al., Cambridge University Press, Cambridge, 2021, pp. 245–267. Cambridge Studies on Governing Knowledge Commons.*
8. **Darakhshan J. Mir**, Sumita Mishra, Paul Ruvolo, Lori Pollock, Sam Engen[1], How Do Faculty Partner While Teaching Interdisciplinary CS+ X courses: Models and Experiences". *Journal of Computing Sciences in Colleges 32 (6), 24-33, 2017.*
9. **Darakhshan J. Mir**, Frameworks for Companies to Share Data With Researchers [Point of View], *Proceedings of the IEEE, September, 2015 Vol. 103, Issue No. 9, Pages 1439-1444.*

Peer-reviewed archival Conference Proceedings

10. Timothy Kariotis, and **Darakhshan J. Mir.** Fighting Back Algocracy: The need for new participatory approaches to technology assessment. In *Proceedings of the 16th ACM Participatory Design Conference 2020-Participation (s) Otherwise-Volume 2. 2020.*
11. **Darakhshan J. Mir**, Mark Latonero, Yan Shvartzshnaider, It Takes a Village: A Community Based Participatory Framework for Privacy Design. In *Proceedings of the The 3rd IEEE European Symposium on Security and Privacy, in the International Workshop on Privacy Engineering, April, 2018.*
12. Brooke Bullek[1], Stephanie Garboski[1], Evan Peck, **Darakhshan J. Mir**, Towards Understanding Differential Privacy: When do People Trust Randomized Response Technique? In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems, ACM CHI 2017.*
13. Sierra Magnotta[1], Anushikha Sharma[1], Jingya Wu[1], **Darakhshan J. Mir**, Creative Computing and Society: When Undergraduates Design a Curriculum for an Introductory Computing Course, *In Proceedings of the 2017 ACM SIGCSE Technical Symposium on Computer Science Education, (SIGCSE '17).*
14. Jiale Hu, Lalitha Sankar, **Darakhshan J. Mir**, Cluster-and-Connect: An algorithmic approach to generating synthetic electric power network graphs. In *53rd Annual Allerton Conference on Communication, Control, and Computing, Allerton, 2015.*
15. Jiale Hu, Lalitha Sankar, **Darakhshan J. Mir**, Cluster-And-connect: A more realistic model for the electric power network topology. In *IEEE International Conference on Smart Grid Communications, SmartGridComm, 2015.*[2]
16. Nick Manfredi[3], **Darakhshan J. Mir**, Claire Schlenker[3], Identifiability of Vehicle Tollgate Records: The Milan Tollgate Dataset, *In Proceedings of The Sixth ASE International Conference on Privacy, Security, Risk and Trust, (PASSAT '14), 2014.*

[2]**Note:** Even though both publications 4 and 5 appear in different venues, they report essentially the same experiment. This is because publication 2 appeared as an invited article at Allerton 2015, owing to my collaborator, Lalitha Sankar, being invited for a presentation at Allerton 2015.

[3] Wellesley Undergraduate student

17. **Darakhshan J. Mir**, Sibren Isaacman, Ramón Cáceres, Margaret Martonosi, Rebecca N. Wright: DP-WHERE: Differentially Private Modeling of Human Mobility. *In Proceedings of the 1st IEEE International Conference on BigData (BigData '13), 2013.*
18. **Darakhshan J. Mir**: Information-theoretic Foundations of Differential Privacy, *In Proceedings of the 5th International Symposium Foundations and Practice of Security (FPS '12), 2012.*
19. **Darakhshan J. Mir**, Rebecca N. Wright: A Differentially Private Estimator for the Stochastic Kronecker Graph Model. *In Proceedings of the 5th International Workshop on Privacy and Anonymity in the Information Society (PAIS '12), collocated with EDBT/ICDT, 2012.*
20. **Darakhshan J. Mir**: Differentially-private Learning and Information Theory. *In Proceedings of the 5th International Workshop on Privacy and Anonymity in the Information Society (PAIS '12), collocated with EDBT/ICDT, 2012.*
21. **Darakhshan J. Mir**, S. Muthukrishnan, Aleksandar Nikolov, Rebecca N. Wright: Pan-private Algorithms via Statistics on Sketches. *In Proceedings of the 30th ACM Symposium on Principles of Database Systems (PODS '11), 2011.*
22. **Darakhshan J. Mir**, Rebecca N. Wright: A Differentially Private Graph Estimator. *In Proceedings of the 9th International Conference on Data Mining Workshops (ICDMW '09), 2009.*
23. Poorvi L. Vora, **Darakhshan J. Mir**: Related-Key Linear Cryptanalysis. *In Proceedings of the IEEE International Symposium on Information Theory (ISIT '06), 2006.*

Peer-reviewed non-archival publications

N1 Darakhshan Mir, Deborah Sills, Bringing Contextual Integrity to Wastewater-Based Epidemiology. *4th Symposium on Applications of Contextual Integrity, NY, NY, August 2022.*

N2 Timothy Kariotis, Megan Prictor, Kathleen Gray, Shanton Chang, **Darakhshan Mir**. Contextual Privacy by Design for Integrated Electronic Health Records: The Information Continuum Project. *2nd Symposium on Applications of Contextual Integrity, Berkeley, CA, August 2019.*

N3 Dylan Rogers[1], Desmond Dinkins[1], Gia Hayes[1], Richard Stover[1], Shin-Won Cho[1], Jennifer Silva, Evan Peck, **Darakhshan Mir**. Uncovering Privacy Norms in Marginalized Communities. *2nd Symposium on Applications of Contextual Integrity, Berkeley, CA, August 2019.*

N4 Anushikha Sharma[1], **Darakhshan Mir**, Understanding the Metadata Surrounding Sexual Assault on College Campuses Through the Lens of Care, *Workshop on Sociotechnical Systems of Care workshop at The ACM Computer-Supported Collaborative Work and Social Computing '18*, November 2018.

N5 Dylan Rogers[1], Desmond Dinkins[1], Gia Hayes[1], Richard Stover[1], Shin-Won Cho[1], Jennifer Silva, Evan Peck, **Darakhshan Mir**. Using Participatory Approaches to Uncover Privacy Norms With Marginalized Communities, 2018

Networked Privacy Workshop at The ACM Computer-Supported Collaborative Work and Social Computing '18, November 2018.

N6 **Darakhshan J. Mir**, Yan Shvartzshnaider, Mark Latonero, "It Takes a Village": A Community Based Participatory Framework for Privacy Design. *Networked Privacy Workshop, Co-Located with CHI'18: ACM Conference on Human Factors in Computing Systems, Montreal, Canada, 2018.*

N7 **Darakhshan Mir**, Ramón Cáceres, Sibren Isaacman, Margaret Martonosi, Rebecca N. Wright, Differentially Private Modeling of Human Mobility at Metropolitan Scales, *In Third conference on the Analysis of Mobile Phone Datasets, 2013. (NetMob '13).*

Public Presentations

PUB1 "Privacy From The Bottom-Up: Can Technology Empower Communities?". Public talk at The Data & Society Research Institute, New York, NY, June 27, 2018.

Invited Presentations

I1 "Putting Theory to Practice: A Discussion of Data Feminism", University of Rochester, The Mellon Digital Humanities Program, April 22, 2021. https://events.rochester.edu/event/putting_theory_to_practice_a_discussion_of_data_feminism#.YLfHpZNKg6U

I2 "Designing for the Privacy Commons", Berkman Klein Center for Internet & Society at Harvard University, Feb 12, 2021.

I3 " Privacy as a Public Good", Commons Governance Workshop, Villanova University, October 12, 2018.

I4 "Contextual Integrity via Community Participation". Workshop on Applications of Contextual Integrity at the Center for Information Technology Policy, Princeton University, December 11, 2017.

I5 "Differential Privacy and Spatio-temporal Data: Challenges and Opportunities", **Keynote presentation at the *2nd Workshop on Privacy in Geographic Information Collection and Analysis, 2015.*** In conjunction with ACM SIGSPATIAL 2015, *Seattle, WA*, November, 2015.

I6 "Tips on Academic Job Searches & Interviewing in Computer Science at Liberal Arts Colleges", Invited presentation as a mentor for the *New Educators Workshop* at the *2016 Annual ACM Technical Symposium on Computer Science Education (SIGCSE), Memphis, TN, 2016.*

I7 "DP-WHERE and DP-Milan: Differentially Private Models of Human Mobility in Metropolitan Areas", Privacy Tools Project, *Harvard University, Cambridge, MA*, July 2014.

I8 "Differentially Private Gaussian Regression", *The Fall DC Area Meeting in Anonymity, Privacy and Security (DCAPS), Washington, DC*, October, 2013.

I9 "The Case for CS fellowships in Liberal Arts Colleges: The Norma Wilentz Hess Fellowship", *Meeting of the Liberal Arts Computer Science Consortium (LACS), August, 2014*

Peer-reviewed Presentations

PR1 Designing for the Privacy Commons. *Privacy Law Scholars Conference, Remote, June 2020.*

PR2 Fighting Back Algocracy: The need for new participatory approaches to technology assessment. In *The 16th ACM Participatory Design Conference, Remote, June 2020.*

PR3 Uncovering Privacy Norms in Marginalized Communities. *2nd Symposium on Contextual Integrity, Berkeley, CA, August 2019.*

PR4 Computing Artifacts Have Politics: Implications of a Depoliticized Education in Ethics of Computing. *The 14th Annual Engineering, Social Justice and Peace Conference, Windsor, NY, June 2019.*

PR5 "It Takes a Village": A Community Based Participatory Framework for Privacy Design. *Privacy Law Scholars Conference, Washington, DC, May 2018.*

PR6 "It Takes a Village": A Community Based Participatory Framework for Privacy Design. *Networked Privacy Workshop, Co-Located with CHI'18: ACM Conference on Human Factors in Computing Systems, Montreal, Canada, March 2018.*

PR7 Janet Davis, Sorelle Friedler, Sherri Goings, **Darakhshan J. Mir**, Cynthia Taylor. "Diverse Paths to Teaching and Research at Liberal Arts Colleges." Panel at the *2015 Grace Hopper Celebration of Women in Computing (GHC 2015), Houston, TX, October 2015.*

PR8 Differentially Private Modeling of Human Mobility at Metropolitan Scales, *In Third conference on the Analysis of Mobile Phone Datasets, (NetMob), Cambridge, MA, May 2013.*

PR9 Ann Irvine, **Darakhshan Mir (moderator)**, and Michael Hay. How PhD students at research universities can prepare for a career at a liberal arts college. *The 44th ACM technical symposium on Computer science education (SIGCSE '13), 2013, March 2013, Denver, CO.*

PR10 On the Deployment of Differential Privacy in Various Contexts of Sensitive Data Analyses, *Doctoral Consortium at the Richard Tapia Celebration of Diversity in Computing Conference, Washington, D.C. August 2013.*

PR11 Information-theoretic Foundations of Differential Privacy, *5th International Symposium on Foundations and Practice of Security, Montreal, October 2012.*

PR12 Differentially-private Learning and Information Theory, *5th International Workshop on Privacy and Anonymity in the Information Society, Berlin, April 2012.*

PR13 A Differentially Private Estimator for the Stochastic Kronecker Graph Model, *5th International Workshop on Privacy and Anonymity in the Information Society, Berlin, April 2012.*

PR14 Pan-private Algorithms via Statistics on Sketches, *30th ACM Symposium on Principles of Database Systems, Athens, June 2011.*

PR15 A Differentially Private Graph Estimator, *Privacy in Data Mining Workshop at the International Conference on Data Mining, Miami, December 2009.*

Other

O1 J. Elliot Miller[1], **Darakhshan J. Mir**. Machine Learning vs Differential Privacy: Understanding the roles of epsilon (ϵ) and prior knowledge. *Poster at the the Susquehanna Valley Undergraduate Research Symposium (SVUR), August, 2018.*

O2 Desmond Dinkins[1], Gia Hayes[1], Dylan Rodger[1], Evan M. Peck, Jennifer Silva, **Darakhshan J. Mir**. Participatory Privacy: Developing a Design Framework for Community-Based Privacy Preservation in Information Flow Systems.*Poster at the the Susquehanna Valley Undergraduate Research Symposium (SVUR), August, 2018.*

O3 Brooke Bullek[1], Stephanie Garboski[1], **Darakhshan J. Mir**, Evan M. Peck. The Comfort Quandary: Do people really trust algorithms that preserve their privacy online? *Poster and Oral presentation at the Susquehanna Valley Undergraduate Research Symposium (SVUR), July, 2016.* **Top 4% of submissions selected to give oral presentation.**

O4 **Darakhshan J. Mir**, Sarah Xu[1].An Empirical Attack on Differential Privacy: Relating ϵ to Levels of Privacy. *Poster at the Susquehana Valley Undergraduate Research Symposiym (SVUR) 2015 and the Bucknell Sigma Xi Poster Session, July, 2016.*

O5 Sierra Magnotta[1], **Darakhshan Mir**, Anushikha Sharma[1], Jingya Wu[1]. A Student Generated Curriculum for an Introductory Computer Science Course, CSCI 187: Creative Computing and Society. *Poster at the Susquehana Valley Undergraduate Research Symposiym (SVUR) 2015 and the Bucknell Sigma Xi Poster Session, July, 2016.*

O6 Presentation on "DP-WHERE and DP-Milan: Differentially Private Models of Human Mobility in Metropolitan Areas", at the *University of California, Berkeley based TRUST (Team for Research in Ubiquitous Secure Technology) Women's Institute in Summer Enrichment, Ithaca, 2014.*

O7 **Darakhshan J. Mir**, Jamie Yip[3], Sharon Zhang[3]. Linking Social Media User Profiles Across Platforms. *Wellesley College Summer Science Research Poster Session, July, 2014.*

O8 Nick Manfredi[3], Shannon Lu[3] Mingo Sanchez, **Darakhshan Mir**. Privacy Implications of a Big Data Mobility Dataset: The Milan Tollgate Dataset. *Wellesley College Summer Science Research Poster Session, August, 2014.*

O9 Claire Cerda[3], Laura Ascher[3], Joanna Bi[3], Johanna Okerlund[3], Claire Schlenker, Elizabeth Stowell[3], Orit Shaer, **Darakhshan Mir**, Oded Nov, "HCI for Personal Genomics: Data Sharing Preferences of Users", *Wellesley College Summer Science Research Poster Session, August, 2014.*

O10 Ann Irvine, **Darakhshan Mir**, and Michael Hay. 2013. How PhD students at research universities can prepare for a career at a liberal arts college (abstract only). In Proceeding of the 44th ACM technical symposium on Computer science education (SIGCSE '13), 2013.

O11 Prahladh Harsha, Moses Charikar, Matthew Andrews, Sanjeev Arora, Subhash Khot, Dana Moshkovitz, Lisa Zhang, Ashkan Aazami, Dev Desai, Igor Gorodezky, Geetha Jagannathan, Alexander S. Kulikov, **Darakhshan J. Mir**,

Alantha Newman, Aleksandar Nikolov, David Pritchard, Gwen Spencer: Limits of Approximation Algorithms: PCPs and Unique Games (DIMACS Tutorial Lecture Notes), 2008.

O12 Poorvi L. Vora, **Darakhshan J. Mir**: Related-Key Statistical Cryptanalysis, *Cryptology ePrint Archive: Report 2007/227, 2007.*

Refereed Posters

POS1 Brooke Bullek[1], Stephanie Garboski[1], Evan Peck, **Darakhshan J. Mir**, Towards Understanding Differential Privacy: When do People Trust Randomized Response Technique? In *Symposium on Usable Privacy & Security, (SOUPS '18), August, 2018.*

POS2 Sierra Magnotta[1], Anushikha Sharma[1], Jingya Wu[1], **Darakhshan J. Mir**, Creative Computing and Society: When Undergraduates Design a Curriculum for an Introductory Computing Course, *Poster and Oral Presentation at The 2017 ACM SIGCSE Technical Symposium on Computer Science Education, (SIGCSE '17).* **Second Place in the ACM Student Research Competition**

POS3 Nick Manfredi[3], **Darakhshan J. Mir**, Shannon Lu[3] and Mingo Sanchez, Privacy Implications of a Big Data Mobility Dataset: The Milan Tollgate Dataset. *Poster at the IEEE BigData Conference, Washington, DC, October, 2014.*

POS4 Nick Manfredi[3], Claire Schlenker[3], **Darakhshan J. Mir**, An Analysis of Mobility Traces from Milan Tollgate Data. *The Grace Hopper Celebration of Women in Computing, October, 2014, Phoenix, Arizona.*

POS5 Claire Schlenker[3], Nick Manfredi[3], **Darakhshan Mir**, Identifiability of Vehicle Tollgate Records: The Milan Tollgate Dataset. *Poster at The Sixth ASE International Conference on Privacy, Security, Risk, and Trust, (PASSAT '14), December, 2014.*

FUNDING

External Funding Planned

- **"(Re)locating trauma: Mapping the dangers of carceral algorithms through stories of incarceration"** To be Submitted in October 2023. Anticipated timeline: June 2024 through July 2025 with approximately $150,000 in funding requested from the *National Endowment for the Humanities*, collaboratively with Vanessa Massaro and Nathan Ryan.

External Funding Awarded

- **"Building a Just Computing Movement: Integrating Curricular and Co-curricular Experiences."** Anticipated timeline: June 2023 to August 2024 with approximately $150,000 in funding requested from the *Mozilla Foundation's Responsible Computing Challenge,* collaboratively with Vanessa Massaro, Evan Peck, Nathan Ryan, Anne Ross, and Sara Stoudt.

- **"Experiences of Algorithmic (Un)Fairness: Integrating qualitative and quantitative analysis to understand experiences of incarcerated individuals in Pennsylvania."** *Google Research's Award for Inclusion Program*, $60,000 collaboratively with Vanessa Massaro.
- **"The Public's Privacy."** *The Data & Society Research Institute*, $30,000, Fall 2017 - Summer 2018.
- **"Privacy Decisions in Human-Data Interaction."** Collaborative Research Experience for Undergraduates (CREU) funding for Bucknell undergraduate students, Brooke Bullek '18 and Stephanie Garboski '18, in collaboration with Evan M. Peck. *Computing Research Association,* $7,500, September'16–May'17.
- Student seed fund gift to support the Association for Computing Machinery Women's (ACM-W) Chapter at Bucknell University in collaboration with ACM-W student leaders. *National Center for Women & Information Technology,* $3,000, September'16–May'17.
- **"Exploring Partnered Teaching of Interdisciplinary CS+X Courses."** *National Science Foundation*, $ 27,046, Februrary '15–October'17, in collaboration with Sumita Mishra (Rochester Institute of Technology), Lori Pollock (U. of Delaware), and Paul Ruvolo (Olin College).

Internal Funding from Bucknell .

- Provost's Interdisiplinary Grant collaboratively with Vanessa Massaro and Nathan Ryan, July 2023 - June 2024.
- Course Development Grant for teaching a foundation seminar, *RESC 098: Data, Power & Inequality,* Summer 2019.
- Dalal Grant for Creativity and Innovation to support Dylan Rogers '21 for research during the Academic Year, Fall 2018 - Spring 2019.
- Bucknell Center for Sustainability and the Environment Summer Research Grant on Field Stations for Multiple Disciplines, jointly with Jennifer Silva, Desmond Dinkins '21, and Dylan Rogers '20, Summer 2018.
- Scholarship Development Grant, Bucknell Institute for Public Policy (BIPP), Summer 2018.
- Scholarship Development Grant, Bucknell University, Summer 2017.
- Course Development Grant for *CSCI 187: Creative Computing & Society* by *Digitial Pedagogy & Scholarship* (formerly ITEC) at Bucknell University, Summer 2016.

TEACHING

Courses Taught

At Bucknell University

(Enrollment in parenthesis)

- CSCI 345: Computers and Society

  - Section 01, Fall 2023 (22)
  - Section 02, Fall 2023 (23)
- CSCI 240: Computing and Society.
  - Section 01, Spring 2023 (21)
  - Section 02, Spring 2023 (22)
  - Section 03, Spring 2023 (16)
  - Section 01, Spring 2022 (24)
  - Section 02, Spring 2022 (22)
  - Section 01, Spring 2021 (16)
  - Section 02, Spring 2021 (24)
  - Spring 2020 (23)
  - Spring 2019 (24)
- RESC 098: Foundation Seminar: Data, Power & Inequality
  - Section 26, Fall 2022 (16)
  - Section 29, Fall 2022 (14)
  - Fall 2021 (18)
  - Fall 2019 (16)
- CSCI 359: Fairness, Transparency, and Privacy When Learning from Data.
  - Spring 2021 (12).
- CSCI 379: Fairness, Transparency, and Privacy When Learning from Data.
  - Spring 2020(6)
  - Spring 2019 (9)
- CSCI 379: Quantifying Data Privacy.
  - Spring 2017 (12)
- CSCI 187: Creative Computing and Society, Lecture and Lab
  - Fall 2018 (24)
  - Fall 2016 (24)
  - Spring 2017 (15)
- CSCI 378 Independent Study on "Data Science, Social Justice, and Carceral Data from Pennsylvannia."Fall 2023.
- CSCI 378 Independent Study on "Analyzing racial bias in the Pennsylvania Additive Classification Tool." Fall 2019.
- CSCI 378 Independent Study on "Studying Community Privacy", Spring 2020, Spring 2021.
- CSCI 378 04: Independent Study on "Designing Technology for Users with Reading Disabilities", Spring 2017 (2).
- CSCI 203: Introduction to Computer Science-I
  - Spring 2016 (22)

  - Fall 2015, Section 01 (27)
  - Fall 2015, Section 03 (19)
- CSCI 203 Lab
  - Spring 2016 (22)
  - Fall 2015 (14)

At Wellesley College

- CS349: Quantifying Data Privacy, Spring 2014, Spring 2015.
- CS114: The Socio-Technological Web, Fall 2014.
- CS110: Computer Science and the Internet, Fall 2013.

At Rutgers University

- CS205: *Discrete Structures*, Summer 2008.
- CS171: *Mathematical Foundations of Computer Science*, (as a Teaching Assistant) Spring 2012.
- CS206: *Probability for Computer Science*, (as a Teaching Assistant) Fall 2009 and Spring 2007.
- CS323: *Numerical Analysis*, (as a Teaching Assistant) Spring 2010 and Spring 2009.
- CS344: *Introduction to Algorithms*, (as a Teaching Assistant) Fall 2008.
- CS111: *Introduction to Computer Programming using Java*, (as a Teaching Assistant) Summer 2007.
- CS211: *Computer Architecture*, (as a Teaching Assistant)Fall 2006.

At The George Washington University

- PHYS102: *Introductory Physics—Mechanics*, (as a Teaching Assistant) Spring 2006.
- CSci41: *Introduction to Computer Science*, (as a Teaching Assistant) Fall 2005.

Guest Lectures

- Guest lecture on *Data Privacy* in the IP course on *Data Science* taught by Brian King and Abby Flynt, Spring, 2016, Spring 2017.

Curriculum Development

- Developed a first-year writing seminar titled “Data, Power & Inequality", Fall 2019.
- Developed an upper-level undergraduate course (*Fairness, Privacy, and Transparency When Learning From Data*) on current research and practice in fairness, privacy and transparency, Spring 2019.
- Developed an upper-level undergraduate seminar course (*CS379, Quantifying Data Privacy*) on current research in data privacy, Spring 2017.
- Developed a new introductory course in Computer Science, *CSCI 187: Computing, Creativity, and Society* to be taught beginning Fall 2016 at Bucknell University to non-Science and Engineering majors, Summer 2016.
- Taught and developed a project-based curriculum for middle-school Math at Martin Luther King elementary school in Newark, NJ, Fall 2011.
- Designed a module for use in Math/Science college courses, as part of the *“Mathematics of Planet Earth”* initiative in collaboration with Vijay Ravikumar (Ph.D. candidate in Math) and Aatish Bhatia (Ph.D. candidate in Physics).
- Proposed a design for a *computer-supported collaborative learning environment* in collaboration with Deepak Iyer (Ph.D. candidate in Physics) to aid the understanding of college-level physics via design of experiment.

Community Teaching

- *Hour of code* co-organizer, Wellesley College, December 2013, to enable residents of the town of Wellesley and the general college community of Wellesley College to experience an hour of computer programming.
- Conducted a six-day robotics workshop for schoolgirls in a village in Indian-administered Kashmir, India, Summer 2012.
- Part of a CS department outreach committee at Rutgers University to local High Schools, Rutgers University, Spring 2012.
- Visited Piscataway High School students to talk to them about the kinds of problems Computer Scientists solve and what Computer Science is about, Piscataway, NJ, May 2012.
- Taught a one hour workshop on *NetLogo*, a programming language for Science simulation, to K-12 teachers and the general community at Rutgers Day, Rutgers University, April 2012.
- Facilitator for the annual New York Academy of Sciences, Robotics Scrimmage, NY, NY, March 2012.
- Education Fellow, After-school Math program with the New York Academy of Sciences, Martin Luther King Elementary School, Newark, NJ, Fall 2011.

MENTORING AND ADVISING

Academic Advisor

- Academic Advisor for 20 Class of 2020 Arts & Sciences students in CSCI at Bucknell University, Fall 2016 - Spring 2020.
- Academic Advisor for 30+ students in the College of Arts & Sciences, Foundation Seminars, Fall 2019 - present.
- Academic Advisor to Hamza Shittu '21 majoring in a self-designed interdisciplinary CS + Art + Music major.

Honors Thesis Supervised

1. Advisor for Swarup Dhar "Algorithmic Fairness in Criminal Justice: Examination of the Pennsylvania Additive Classification Tool."2022. Honors Honors Theses. 607. https://digitalcommons.bucknell.edu/honors_theses/607/
2. Advisor for Anushikha Sharma, "Contextualizing Sexual Assault Data Collection on College Campuses: A socio-technical approach."2019. Honors Theses. 501.https://digitalcommons.bucknell.edu/honors_theses/501
3. Reader for Matt Brown, "Ethics, Privacy and Data Collection: A Complex Intersection", 2021). Honors Theses. 546. https://digitalcommons.bucknell.edu/honors_theses/546
4. Nick Manfredi, "Privacy Implications of New York City's Stop-and-Frisk Data."Honors Thesis, Wellesley College, 2015.

Undergraduate Research: Students Mentored

At Bucknell University

1. Reva Sharma '25 (Summer 2023 – present)
2. Ramon Asuncion Batista '25 (Summer 2023 - present)
3. Twity Gitonga '24 (Spring 2024 – present)
4. Holiness Kernadi '26 (Summer 2023 - present)
5. Shan Monaghan '26 (Summer 2023 - present)
6. Myra Anigbo '24 (Fall 2023)
7. Nasif Walid '26 (Summer 2023)
8. Yacine Bouabida '24 (Fall 2022 – Spring 2024, jointly with Nathan Ryan)
9. Kona Glenn '25 (Fall 2022 – Spring 2024, jointly with Nathan Ryan)
10. Shianne Twoguns '24 (Fall 2022 – Spring 2024, jointly with Nathan Ryan)
11. Swarup Dhar '22 (Summer 2019 – Spring 2022, jointly with Vanessa Massaro and Nathan Ryan)
12. Dylan Rogers '21 (Summer 2018 – Summer 2020)
13. Sophie Bae '23 (Fall 2019 - Spring 2020)
14. Shin-Won Cho '21 (Fall 2019 - Spring 2020)
15. Rich Stover '20 (Spring 2019)
16. Nathan Wintersgill '20 (Fall 2018 - Spring 2020)
17. Anushikha Sharma '18 (Summer 2016, Fall 2018 - Spring 2019)
18. Christina Yu '21 (Fall 2019)

19. Hamza Shittu ’21 (Summer 2019)
20. Clinard Smith ’21 (Summer 2019)
21. Desmond Dinkins ’21 (Summer 2018 – Spring 2019)
22. Gia Hayes ’20 (Summer 2018)
23. J. Elliot Miller ’19 (Summer 2018 – Spring 2019)
24. Titilope Awe ’19 (Summer 2018)
25. Matt Brown ’20 (AY 2016-17, jointly with Nathan Ryan)
26. Elise Covert ’20 (AY 2016-17, jointly with Nathan Ryan)
27. Marissa DiPalo ’10 (AY 2016-17, jointly with Nathan Ryan)
28. Brooke Bullek ’18 (Summer 2016, and the Academic year 2016-17, jointly with Evan Peck)
29. Stephanie Garboski ’18 (Summer 2016, and the Academic year 2016-17, jointly with Evan Peck)
30. Sierra Magnota ’18 (Summer 2016)
31. Jingya Wu ’19 (Summer 2016)
32. Sarah Xu ’19 (Spring 2016, Summer 2016 & the Academic Year 2016-17)
33. Sam Engen (non-degree student, Summer 2016)
34. Brittany Caceres ’19 (Summer 2016)

At Wellesley College

35. Sharon Zhang ’18 (Summer 2015)
36. Jamie Yip ’17 (Summer 2015)
37. Nick Manfredi ’15, (Summer 2014 and Academic Year 2014-15–Honors Thesis), one of 11 nationwide winners of the 2014-15 Scholarships for Women Studying Information Security (SWSIS).
38. Cali Stenson ’16 (Fall 2014).
39. Shannon Lu ’16 (Summer 2014).
40. Claire Cerda ’15 (Summer 2014) (Sociology major and Anthropology minor).
41. Dominick Sanchez ’17 (Summer 2014) (visiting from Bowdoin College).

At Rutgers University

42. Marco Alonso Perez-Guzman (Summer 2012 & Summer 2013), now a senior at University of California, Los Angeles (UCLA).

Posters and presentations by my research students

Presenting students' names are in bold.

Students at Bucknell

- **Swarup Dhar**, Vanessa Massaro, Darakhshan Mir, Nathan Ryan, Algorithmic analysis of the Pennsylvania Additive Classification Tool, *UpState Statistic Conference '21, April 2021.* **won an Honorable Mention award for Best Applications Paper.**
- **Anushikha Sharma**, Darakhshan Mir, Understanding the Metadata Surrounding Sexual Assault on College Campuses Through the Lens of Care, *Workshop on Sociotechnical Systems of Care workshop at The ACM Computer-Supported Collaborative Work and Social Computing '18*, November 2018.
- **Dylan Rogers**, Desmond Dinkins, Gia Hayes, Richard Stover, Shin-Won Cho, Jennifer Silva, Evan Peck, Darakhshan Mir. Uncovering Privacy Norms in Marginalized Communities. *2nd Symposium on Applications of Contextual Integrity, Berkeley, CA, August 2019.*
- **Dylan Rogers, Desmond Dinkins**, Gia Hayes, Richard Stover, Shin-Won Cho, Jennifer Silva, Evan Peck, Darakhshan Mir. Using Participatory Approaches to Uncover Privacy Norms With Marginalized Communities, *2018 Networked Privacy Workshop at The ACM Computer-Supported Collaborative Work and Social Computing '18*, November 2018.
- **J. Elliot Miller**, Darakhshan J. Mir. Machine Learning vs Differential Privacy: Understanding the roles of epsilon (ϵ) and prior knowledge. *Poster at the the Susquehanna Valley Undergraduate Research Symposium (SVUR), August, 2018.*
- **Desmond Dinkins**, Gia Hayes, **Dylan Rogers**, Evan M. Peck, Jennifer Silva, Darakhshan J. Mir. Participatory Privacy: Developing a Design Framework for Community-Based Privacy Preservation in Information Flow Systems.*Poster at the the Susquehanna Valley Undergraduate Research Symposium (SVUR), August, 2018.*
- **Brooke Bullek, Stephanie Garboski** Evan Peck, Darakhshan J. Mir, Towards Understanding Differential Privacy: When do People Trust Randomized Response Technique? Oral Presentation at *The 2017 CHI Conference on Human Factors in Computing Systems, ACM CHI 2017, May, 2017*
- **Sierra Magnotta, Anushikha Sharma, Jingya Wu**, Darakhshan J. Mir, Creative Computing and Society: When Undergraduates Design a Curriculum for an Introductory Computing Course, *Poster and Oral Presentation at The 2017 ACM SIGCSE Technical Symposium on Computer Science Education, (SIGCSE '17), March 2017* **Second Place in the ACM Student Research Competition**
- **Brooke Bullek, Stephanie Garboski**, Darakhshan J. Mir, Evan M. Peck. The Comfort Quandary: Do people really trust algorithms that preserve their privacy online? *Poster and Oral Presentation at the Susquehanna Valley Undergraduate Research Symposium (SVUR), July, 2016.* **Top 4% of submissions selected to give oral presentation.**

- Darakhshan J. Mir, **Sarah Xu** .An Empirical Attack on Differential Privacy: Relating ϵ to Levels of Privacy. *Posters at the Susquehana Valley Undergraduate Research Symposiym (SVUR) 2015 and the Bucknell Sigma Xi Poster Session, July, 2016.*
- **Sierra Magnotta**, Darakhshan Mir, **Anushikha Sharma, Jingya Wu.** A Student Generated Curriculum for an Introductory Computer Science Course, CSCI 187: Creative Computing and Society. *Posters at the Susquehana Valley Undergraduate Research Symposiym (SVUR) 2015 and the Bucknell Sigma Xi Poster Session, July, 2016.*

Students at Wellesley College

- **Cali Stenson**, Ana Balcells, Megan Chen. Burning Up Privacy on Tinder. *Poster at the Symposium on Usable Privacy and Security (SOUPS '15), June, 2015.*
- **Nick Manfredi**, Darakhshan Mir. Privacy Implications of New York City's Stop-and-Frisk Data. *Oral presentation at Wellesley College's 19th Ruhlman Conference, April, 2015.*
- **Cali Stenson**, Darakhshan J. Mir. Fitbit User Study: Privacy Concerns in Mobile Fitness Technology. *Oral presentation at Wellesley College's 19th Ruhlman Conference, April, 2015.*
- **Claire Schlenker**, Nick Manfredi, Darakhshan Mir, Identifiability of Vehicle Tollgate Records: The Milan Tollgate Dataset. *Poster at The Sixth ASE International Conference on Privacy, Security, Risk, and Trust, (PASSAT '14), December, 2014.*
- Darakhshan J. Mir, **Jamie Yip, Sharon Zhang**. Linking Social Media User Profiles Across Platforms. *Wellesley College Summer Science Research Poster Session, July, 2014.*
- **Nick Manfredi**, Shannon Lu and Mingo Sanchez, Darakhshan J. Mir "Privacy Implications of a Big Data Mobility Dataset: The Milan Tollgate Dataset", *IEEE BigData Conference, Washington, DC, October, 2014.*
- Nick Manfredi, **Claire Schlenker**, Darakhshan J. Mir, "An Analysis of Mobility Traces from Milan Tollgate Data", *The Grace Hopper Celebration of Women in Computing, October, 2014, Phoenix, Arizona.*
- **Nick Manfredi, Shannon Lu and Mingo Sanchez**, Darakhshan J. Mir, "Privacy Implications of a Big Data Mobility Dataset: The Milan Tollgate Dataset", *Wellesley College Summer Science Research Poster Session, August, 2014.*
- **Claire Cerda, Laura Ascher, Joanna Bi, Johanna Okerlund, Claire Schlenker, Elizabeth Stowell**, Orit Shaer, Darakhshan Mir, Oded Nov, "HCI for Personal Genomics: Data Sharing Preferences of Users", *Wellesley College Summer Science Research Poster Session, August, 2014.*

Awards earned by my research students

- Brooke Bullek '18, Scholarship for Women Studying Information Security, 2016 - 17, awarded by the Computing Research Association.

- Brooke Bullek '18, ACM-W Scholarship to attend a research conference in Computer Science.

Other Mentoring

- Lead graduate mentor at the *Douglass Project for Rutgers Women in Math, Science, and Engineering* at Rutgers University, for undergraduate women pursuing a STEM major and living in the Bunting-Cobb residence hall at Rutgers University, 2012-13.
- Graduate student adviser to the *Douglass-DIMACS Computing Corps*, a participating member of the *STARS (Students & Technology in Academia, Research & Service) Alliance* program. Assist undergraduate women in designing and implementing an after-school program for middle school students in the neighboring community of New Brunswick, 2012-13.

SERVICE

Professional Service

External expert

- External expert on a Mozilla Foundation supported grant to Marty J. Wolf and Colleen Greer of Bemidji State University to develop and implement "responsible computer science"teaching modules, 2021.

Doctoral Dissertation Committee Member

- Committee Member for the Doctoral Dissertation of Timothy Kariotis, PhD candidate at the University of Melbourne School of Computing and Information Systems.

Editor

- Member of the Editorial Board of the journal *Technology Science* a new online journal edited by leading computer science researchers and educators on "the benefits and adverse consequences of social, political, organizational and personal aspects of technology."http://techscience.org/editorial_board.html, Fall 2015–present.

Conference/Workshop Service

- Program Committee Member: *Third AAAI/ACM Conference on AI, Ethics, and Society, AIES, 2020.*
- Program Committee Member: *2nd Annual Symposium on Applications of Contextual Integrity 2019.*

- Organizing Committee Member, *The 50th ACM Technical Symposium on Computer Science Education SIGCSE 2019.*
- Program Committee Member: *Symposium on Applications of Contextual Integrity, 2018.*
- Invited to provide feedback to an NSF-funded project on *Mapping Privacy and Surveillance Dynamics in Emerging Mobile Ecosystems: Practices and Contexts.* at University of Maryland, College Park, June 25-26, 2018.
- Organizer of a workshop on *Educating Computer Scientists for the Public Interest* at *Data & Society Research Institution*, New York, April 17, 2018.
- Organized an NSF-funded workshop *Teaching & Designing Partnered Interdisciplinary CS+X Courses*, of about 30 faculty members in Computer Science and other disciplines across the United States who had taught interdisciplinary courses with Computer Science as one of the disciplines. In collaboration with Paul Ruvolo, Lori Pollock, and Sumita Mishara, Olin College of Engineering, October 24-25, 2015.
- Technical Program Committee: The 6th IEEE International Conference on Smart Grid Communications (SmartGridComm), 2015.
- Scholarship reviewer for *The Grace Hopper Celebration of Women in Computing, 2014 and 2015.*
- Student volunteer, SIGCSE, 2012, 2013.
- Invited participant at a two-day Computing Research Association workshop on *Innovations in Computing Education*, June 2014.

Referee Service

- Transactions on Information Forensics & Security.
- The ACM CHI Conference on Human Factors in Computing Systems, 2019.
- Computers and Security.
- IEEE/ACM Transactions on Networking.
- IEEE Transactions on Information Theory.
- Journal of Selected Topics in Signal Processing.
- IEEE Transactions on Vehicular Technology.
- Journal of Privacy and Confidentiality.
- IEEE Transactions on Dependable and Secure Computing.
- Information Sciences.
- The 5th IEEE International Conference on Smart Grid Communications (SmartGridComm), 2014.
- The 5th International Conference on Mobile Computing, Applications and Services (MobiCASE), 2013.
- The 2nd IEEE INFOCOM Workshop on Communications and Control for Smart Energy Systems (CCSES), 2013.
- The 2nd IEEE INFOCOM Workshop on Communications and Control for Smart Energy Systems, 2013.

- The 18th ACM SIGKDD Conference on Knowledge Discovery and Data mining (KDD), 2012.

Award/Fellowship Applications

- Reviewer for the Class of 2018-19 Fellows at the Data & Society Research Institute.
- Reviewer for the Summer Research Program at the Douglass Project for Rutgers Women in Math, Science, and Engineering, Rutgers University, 2013.
- Judge, *The NSF Innovation in Graduate Education Challenge, 2013.*
- Reviewer for the *National Council for Women in Information Technology Award for Aspirations in Computing, 2012.*
- Judge for Aresty research symposium, a university-wide undergraduate research event at Rutgers University, 2011.

Panel Organizer and Participant

- Panel Organizer and participant, "Diverse Paths to Teaching and Research at Liberal Arts Colleges", The annual *Grace Hopper Celebration of Women in Computing, October, 2015.*
- Panelist, "International Faculty and Scholars as Role Models for International Students", Wellesley College, Fall 2014.
- Panelist, "Why STEM students should consider graduate school?", Rutgers University, July 2013.
- Co-organizer of Birds-of-a-Feather (BOF) session for CS graduate students seeking a career in a liberal arts college at the *2013 Annual ACM Technical Symposium on Computer Science Education (SIGCSE), Denver, Colorado, 2013.*
- Co-organized a campus-wide research event, specifically for undergraduate women in STEM, with three other graduate mentors, educating them about undergraduate research opportunities, Rutgers University, November 2012.

Service to Bucknell University

- Served on the Departmental Review Committee for a fourth year review for retention, Fall 2023.
- Served on the Departmental Review Committee for a second-year review for retention, Fall 2022.
- Co-oraganizer of student travel to the Richard Tapia Celebration of Diversity in Computing, Fall 2022 and Fall 2023.
- Co-organizer of a Learning Community on "STEM (In)Justice: Inside and Outside the Curriculum", Fall 2022 - Spring 2023.
- Co-facilitator of "Centering the Margins,"Spring 2023 Series with Marcus Scales (Multicultural Student Services), Deborah Sills (Civil & Environmental Engineering), and Deepak Iyer (Physics & Astronomy.)
- Faculty Representative, Committee on Admissions and Financial Aid, Fall 2018 - Spring 2021 (on parental leave Fall 2020.)

- Co-organizer with Jennifer Thomson on a Learning Community on “Democracy in the University,"Fall 2019 - Spring 2020.
- Co-organizer of a University-wide reading group on "Engineering Justice,"Fall 2019 - Spring 2020.
- Subcommittee on updating Department of Computer Science’s DRC document, Spring 2020.
- Curricular revision subcommittee, Department of Computer Science: CS + X, Fall 2018
- Curricular revision subcommittee, Department of Computer Science: BA and BS, Spring 2019, Fall 2019.
- Senior conversations for ABET accreditation, Department of Computer Science, Spring 2019.
- Prize selection committee, Department of Computer Science, Spring 2020.
- Participant of a Learning Community on collaboration between Student Affairs & Academic Affairs, organized by Sue Ellen Henry, Amy Badal, and Barbara Altman. Fall 2016 - Spring 2017.
- Bucknell University Faculty Colloquium Committee, Fall 2016 – Spring 2019. (On leave from Summer 2017 - Summer 2018)
- Organized student travel (12 students) to the Grace Hopper Celebration of Women in Computing, 2016.
- Graduate School Adviser, Department of Computer Science, Fall 2015 – Spring 2017.
- Academic Advisor for the Class of 2020 Computer Science majors in the College of Arts & Sciences (16 students), Fall 2016–present.
- Bucknell faculty liason to the National Center for Women and Information Technology’s Academic Alliance, January 2016–present.
- Creator and Moderator of the “cs-commnunity” mailing list for all student majoring or interested in Computer Science, Fall 2015–present.
- Creator and Moderator of the “women-and-computing” mailing list for women in computing, Fall 2015–present.
- Organizer of a May-plan meeting of over 20 faculty and staff members across campus to discuss ways to increase the participation of underrepresented students in STEM at Bucknell. In collaboration with Philip Asare (Electrical and Computer Engineering), Laura Beninati (Mechanical Engineering), and Morgan Benowitz-Fredericks (Biology), May 2016.
- Committee on Library and Information Resources (CLIR), Engineering College Representative, Spring 2016.
- Computer Science Department Search Committee, 2014–15.
- Faculty adviser for the Association for Computing Machinery-W (ACM-W) chapter at Bucknell University, Spring 2016–present.
- Computer Science Representative at the Admissions Fall Open House Program, 2015.
- Organized Panel on Undergraduate Research Opportunities in Computing, Spring 2016.

- Regular Participant of the TLC supported Learning Community on *Diverse Perspectives in STEM*, 2015–16.
- Member of *Diversity in STEM Coalition*, an informal working group of faculty and staff dedicated to improving the experiences of underrepresented students in STEM disciplines at Bucknell. May 2016 – present.

Service to Wellesley College

- CS Colloquium host for two department-wide colloquia, Wellesley College, Spring 2014.
- Organizer, reading group on privacy, Wellesley College, Fall 2013.
- Faculty Advisor, ACM-W Student Chapter.
- Student Travel Committee, Wellesley College,Spring 2014–present.