

Somya D. Mohanty, PhD.

Curriculum Vitae

Education

- 2013 **Doctor of Philosophy in Computer Science**, *Mississippi State University*, GPA – 4.0.
- 2009 **Master of Science in Computer Science**, *Florida State University*, GPA – 3.5 .
- 2006 **Bachelor of Science in Computer Science and Engineering**, *Biju Patnaik University*, Percentage – 78.60 (*First Class with Honors*).

Doctoral Dissertation

- Title Ordered Merkle Tree – A Versatile Data-structure for Security Kernels
- Description A minimal Trusted Computing Base utilizing a novel data-structure called Ordered Merkle Trees to provide trustworthy assurances for information systems.

Research Interests

- Big Data
- Data Science
- Computer/Information Security
- Machine-learning
- Distributed Computing and Storage
- Assured Analytics
- Trustworthy Computing

Professional Experience

- 2016–Present **Assistant Professor**, *Department of Computer Science*, University of North Carolina - Greensboro.
Working as Assistant Professor at Department of Computer Science (UNCG). Primary research areas include — Big-Data, Machine Learning, Data Science, Cyber-Security, Trustworthy Computing.
Research Projects
 - “Minimal Trusted Computing Base for Distributed Systems”
 - “Anomaly Detection using Scalable Machine-Learning in Network Traffic”
 - “Health Infromatics using Big Data Analytics”
 - “Machine-Learning on Large-Scale MicroBlogs Analysis - Twitter”
 - “Machine-Learning and Graph Analytics for Scientific Publication Data”
- 2013–2016 **Assistant Research Professor**, *Social Science Research Center*, Mississippi State University.
Worked as Assistant Research Professor at Social Science Research Center (Mississippi State University). The primary area of research is the design and development of the Social Media Tracking and Analysis System (SMTAS). SMTAS is designed as a cloud based researcher tool for aggregating and analyzing data from the social media networks such as Twitter. I also coordinated the efforts of personnel involved in the Innovative Data Laboratory.
Projects

- Principal Investigator - “Event/Anomaly Detection in High Velocity Streaming Data.”, Distributed Analytics and Security Institute - Pacific Northwest National Laboratory
- Co-Principal Investigator - “Assessment of Social Media Usage During Severe Weather Events and the Development of a Twitter-based Model for Improved Communication of Storm-related Information”, Coastal Storm Awareness Program, NOAA
- Principal Investigator - “Social Media Tracking and Analysis System (SMTAS)”, Mississippi Agricultural and Forestry Experiment Station, Mississippi State University
- Principal Investigator - “Tobacco Control Reporting and Analysis System”, Mississippi Tobacco Control Unit, NIH
- Research Lead - “Social Geo-Sensors”, Social Science Research Center, Mississippi State University
- Research Lead - “Networks of Research”, Social Science Research Center, Mississippi State University

2012–2013 **Graduate Research Assistant**, *Social Science Research Center*, Mississippi State University.

Worked as the lead programmer for the Social Science Research Center in developing Social Media Tracking and Analysis Software (SMTAS). SMTAS is used for large-scale social media (Twitter, Facebook) tracking and analysis on attributes such as data-flow, sentiment analysis, geo-location mapping, data-mining for keywords/phrases related to an event.

Projects

- Twitter Data Mining
- Cloud Based Distributed Computing and Web-Frameworks
- Natural Language Processing

2009–2011 **Research Assistant**, *Computer Science and Engineering*, Mississippi State University.

Worked with Dr. Mahalingam Ramkumar to design architecture and algorithms for trustworthy platforms for various distributed applications.

Projects

- Securing Cloud File Storage using Minimal Trusted Computing Base
- Minimal TCB for Distributed Systems
- Minimal TCB for MANET Systems

2008–2009 **Research Assistant**, *Computer Science*, Florida State University.

Worked with Dr. Andy Wang on file redundancy research in Operating Systems.

2006–2008 **Web Developer**, *Computer Science*, Florida State University.

Worked for two years developing online systems, web-applications and maintaining databases for the department.

Teaching Experience

University of North Carolina - Greensboro

Courses Developed/Taught.

Fall - ‘21 **CSC 105 - Data, Computing, and Quantitative Reasoning**, *Problem-based introduction to quantitative reasoning, including computational methods; formulation of quantitative arguments; algorithmic understanding, selection, and utilization; data modeling, interpretation, and summarization of results, on real world datasets.*, Under-Graduate, ***New course developed (Currently under review).***

Fall - ‘16, ‘17, ‘18 **CSC 339 - Concepts of Programming Languages**, *Concepts of block-structured, object-oriented, functional, logic, and concurrent programming languages. Comparative study of syntactic and semantic features of these languages and writing programs using them.*, Under-Graduate.

- Fall - '17, '18, '19, '20 **CSC 405/605 - Data Science**, *Problem-based learning introduction to Data Science, including programming with data; data mining, munging, and wrangling; statistics, analytics, visualization; and applied machine learning, directed towards scientific, social, and environmental challenges.*, Under-Graduate and Graduate, ***New course developed.***
- Fall - '21 **CSC 411/611 - Advanced Data Science**, *Experiential learning towards advanced concepts of Data Science, including efficient and parallel programming with large scale datasets, advanced data organization and storage, applied machine learning and inferencing, towards real-world challenges.*, Under-Graduate, ***New course developed.***
- Fall - '19 **IAF 603 - Preparing Data for Analytics**, *Students are exposed to current approaches, techniques and best practices for collecting, cleaning and normalizing data, processing, storing, managing, securing and preparing structured and unstructured big data sets for analytics.*, Graduate, ***New course developed.***
- Fall - '19 **IAF 604 - Machine Learning and Predictive Analytics**, *This course is an introduction to machine learning and predictive analytics for Big Data. Some key components include deep learning, supervised, unsupervised models, regression, inductive learning, and time series analysis.*, Graduate, ***New course developed.***
- Spring - '17, '19 **CSC 462/662 - Principles of Operating Systems**, *Techniques and strategies used in operating system design and implementation: managing processes, input/output, memory, scheduling, file systems, and protection.*, Under-Graduate and Graduate.
- Spring - '17, '18 **CSC 490 - Senior Capstone**, *Application of classroom knowledge and skills in computer science to solve real-world problems and to develop research and development skills.*, Under-Graduate.
- Spring - '17 **CSC 495/663 - Network Security**, *The course explores the network security concepts of communication protocols; security in routing; remote authentication; access policies; web security; network vulnerabilities; intrusion detection and prevention; and network traffic analysis.*, Under-Graduate and Graduate, ***New course developed.***
- Concentrations Developed.**
- Spring - '20 **Concentration - Concentration in Computational Analytics (IAC)**, *The goal of the Concentration in Computational Analytics Concentration is to provide graduate students (in Informatics and Analytics) knowledge depth in the areas of Big Data and Data science. The concentration allows students from the Informatics and Analytics program a pathway to participate in computer science courses, and also explore capstone project development in the domain.*, Graduate, ***New concentration developed.***
- Fall - '18 **Concentration - Data Science and Big Data**, *The goal of the Data Science and Big Data Concentration is to provide graduate students (in Computer Science) key knowledge of appropriate theories, algorithms, and technologies, towards development of analytical systems/models for disparate, complex, and small/large scale datasets. The learning objectives of the program will enable students to tackle a wide variety of data-focused scientific, social, and environmental challenges.*, Under-Graduate and Graduate, ***New concentration developed.***

Mississippi State University

- 2015–2016 **Adjunct Faculty**, *Computer Science and Engineering*, Mississippi State University.
Teaching **CSE 4990/6990: Big Data and Data Science** course in the Department of Computer Science and Engineering in Fall' 15. The course focuses on theories, techniques, and the tools necessary to gain insights from Big Data.
The core topics addressed by the course are:
- Big-Data and its applications
 - Data-Mining and its methods on large data-sets
 - Machine-Learning and its applicability on real world data-sets

2011–2012 **Graduate Teaching Assistant**, *Computer Science and Engineering*, Mississippi State University.

Taught undergraduate programming courses to freshmen and sophomore students

Courses

- CSE1284: Introduction to Programming Languages - Python
- CSE1384: Intermediate Computer Programming - Python and C++

Manuscripts

Published - University of North Carolina - Greensboro

- [1] Prashanti Manda, Saed SayedAhmed, and **Mohanty, Somya D.** “Automated ontology-based annotation of scientific literature using deep learning”. In: *Proceedings of The International Workshop on Semantic Big Data*. 2020, pp. 1–6.
- [2] Matthew C Moretz, Daniel Foster, John Weber, Rinty Chowdhury, Shah Nafis Rafique, Evan B Goldstein, and **Mohanty, Somya D.** “psi-collect: A Python module for post-storm image collection and cataloging”. In: *Journal of Open Source Software* 5.47 (2020), p. 2075.
- [3] An Dinh, Stacey Miertschin, Amber Young, and **Somya D Mohanty.** “A Data-driven Approach to Predicting Diabetes and Cardiovascular Disease with Machine Learning”. In: *BioMed Central (BMC) - Medical Informatics and Decision Making*. Vol. 19. 1. Springer, Nov. 2019, p. 211.
- [4] Deborah A Lekan, Thomas P McCoy, Marjorie Jenkins, **Somya D Mohanty**, and Prashanti Manda. “Comparison of a Frailty Risk Score and Co-Morbidity for Early Re-hospitalization using Electronic Health Record Data”. In: *Innovation in Aging* 3.Supplement_1 (2019), S906–S906.
- [5] Nastaran Pourebrahim, Selima Sultana, John F. Edwards, Amanda Gochanour, and **Somya D Mohanty.** “Understanding Twitter Use during Natural Disasters: A Case Study of Hurricane Sandy”. In: *International Journal of Disaster Risk Reduction*. May 2019.
- [6] Bin Luo, Qi Zhang, and **Somya D Mohanty.** “Data-Driven Exploration of Factors Affecting Federal Student Loan Repayment”. In: *Proceedings of the 2018 International Conference on Data Science ICDATA '18, 2018 World Congress in Computer Science, Computer Engineering, & Applied Computing* (June 2018).
- [7] Prashanti Manda, Lucas Beasley, and **Somya D Mohanty.** “Taking a Dive: Experiments in Deep Learning for Automatic Ontology-based Annotation of Scientific Literature”. In: *International Conference on Biological Ontology 2018* (Aug. 2018).
- [8] Nastaran Pourebrahim, Selima Sultana, and Jean-Claude Thill and. “Enhancing Trip Distribution Prediction with Twitter Data: Comparison of Gravity and Neural Networks”. In: *26th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems - ACM SIGSPATIAL 2018* (Sept. 2018).
- [9] Gina Rico Mendez, Arthur G Cosby, and **Somya D Mohanty.** “Obamacare On Twitter: Online Political Participation And Its Effects On Polarization”. In: *TEORIJA IN PRAKSA* 55.2 (May 2018), pp. 419–444.
- [10] Logan Rohde, Somya Mohanty, Jing Deng, and Fereidoon Sadri. “The Propagation of Counteracting Information in Online Social Networks: A Case Study”. In: *2018 IEEE International Conference on Data Mining Workshops, ICDM Workshops, Singapore, Singapore, November 17-20, 2018*. Nov. 2018, pp. 1173–1177. DOI: 10.1109/ICDMW.2018.00168. URL: <https://doi.org/10.1109/ICDMW.2018.00168>.

- [11] David Santana, Shan Suthaharan, and **Somya D Mohanty**. “What we learn from learning-Understanding capabilities and limitations of machine learning in botnet attacks”. In: *Proceedings of the 2018 International Conference on Security & Management - SAM’18, 2018 World Congress in Computer Science, Computer Engineering, & Applied Computing* (June 2018).
- [12] Alex Haan, **Somya D Mohanty**, and Prashanti Manda. “What’s hot and what’s not? - Exploring trends in bioinformatics literature using topic modeling and keyword analysis”. In: *The International Symposium on Bioinformatics Research and Applications - 2017*. Feb. 2017.
- [13] Gina Rico Mendez, Megan Stubbs Richardson, **Somya D Mohanty**, and Arthur G Cosby. “Implications of Social Media on Disaster Response: Commentary on the Flint Twitterverse”. In: *Flint Water Crisis*. Ed. by B. Stabile and T. T. Neaves. George Mason University, 2017.
- [14] **Somya D Mohanty**, Mahalingam Ramkumar, and Naresh Adhikari. “OMT: A Dynamic Authenticated Data Structure for Security Kernels”. In: *International Journal of Computer Networks & Communications* 8.4 (July 2016).
- [In Review - University of North Carolina - Greensboro](#)
- [1] Franklin Wei, Mahalingam Ramkumar, Stephen R. Tate, and **Somya D Mohanty**. “A Scalable, Trustworthy Infrastructure for Collaborative Container Repositories”. In: *International Journal of Information Security*. May 2019.
- [In Preparation - University of North Carolina - Greensboro](#)
- [1] Nastaran Pourebrahim, Saed Sayedahmed, Brown Biggers, Fereidoon Sadri, Rick Bunch, and **Somya D Mohanty**. “Twitter and Hurricanes - A Multi-Model based Visual Data Filtering for aiding recovery during natural disasters.” In: 2020.
- [2] Darpan Jhawar, **Somya D Mohanty**, and Prashanti Manda. “Will I Get Cited - Predicting Citations in Scientific Publications using Scalable Machine Learning.” In: 2019.
- [3] Swetha Polishetty, Prashanti Manda, and **Somya D Mohanty**. “A Novel Approach Towards Scientific Publication Citation Normalization - Microsoft Academic Graph.” In: 2019.
- [Published - Mississippi State University](#)
- [1] Lindsey Peterson, Kentse Radebe, and **Mohanty D, Somya**. “Democracy, Education, and Free Speech: The Importance of# FeesMustFall for Transnational Activism”. In: *Societies Without Borders* 11.1 (2016), p. 10.
- [2] Mahalingam Ramkumar and **Somya D Mohanty**. “Reliable Assurance Protocols for Information Systems”. In: *International Conference on the Evolving Internet*. Oct. 2015.
- [3] **Somya D Mohanty** and Mahalingam Ramkumar. “Assuring a Cloud Storage Service”. In: *International Journal of Information Sciences and Computer Engineering*. Feb. 2015.
- [4] Staci Zavattaro, Eddie French, and **Somya D Mohanty**. “A Sentiment Analysis of U.S. Local Government Tweets: The Connection Between Tone and Citizen Participation”. In: *Government Information Quarterly*. 2015.
- [5] Robert C. McMillen, **Somya D Mohanty**, and John F. Edwards. “Applying the Social Media Tracking and Analysis System to Social Science Research”. In: *Annual Conference - World Association for Public Opinion Research* (Sept. 2014).
- [6] Mahalingam Ramkumar and **Somya D Mohanty**. “A Trustworthy Assurance-as-a-Service Architecture”. In: *ICH – Workshop on Cryptography and Information Security* (June 2014).
- [7] **Somya D Mohanty**, Vinay Totakura, and Mahalingam Ramkumar. “An Efficient Trusted Computing Base for MANET Security”. In: *Journal of Information Security*. June 2014.

- [8] **Somya D Mohanty**, Arun Velagapalli, and Mahalingam Ramkumar. “An Efficient TCB for a Generic Content Distribution System”. In: *Cyber-Enabled Distributed Computing and Knowledge Discovery (CyberC), 2012 International Conference on*. IEEE. 2012, pp. 5–12.
- [9] Arun Velagapalli, **Somya D Mohanty**, and Mahalingam Ramkumar. “An Efficient TCB for a Generic Data Dissemination System”. In: *IEEE International conference on Communications in China, Communication Theory and Security Symposium*. IEEE. 2012, pp. 5–12.
- [10] **Somya D Mohanty** and Mahalingam Ramkumar. “Securing File Storage in an Untrusted Server-Using a Minimal Trusted Computing Base.” In: *CLOSER*. 2011, pp. 460–470.

Magazine, Article, and Blogs

- [1] Research NC. *Research NC: Big data boom*. <https://businessnc.com/research-nc-big-data-boom/>. Business North Carolina, 2019.
- [2] Mark Tosczaik. *Real Big Data*. <https://researchmagazine.uncg.edu/spring-2019/real-big-data/>. UNCG Research Magazine, 2019.
- [3] Coastal Processes and Hazards ? News. *Tweeting in the Tempest: What We’re Learning From #Sandy*. <http://www.seagrant.sunysb.edu/articles/t/tweeting-in-the-tempest-what-we-re-learning-from-sandy-coastal-processes-hazards-news>. Coastal Storm Awareness Program - NOAA, 2014.
- [4] Innovative Data Laboratory. *Network Analysis of Twitter During Hurricane Sandy*. <http://blog.idl.ssrc.msstate.edu/?p=42>. Social Science Research Center, 2013.
- [5] Pointe Innovation Magazine. *Going beyond the trend on social media*. <http://innovatems.uberflip.com/i/229713-point-innovation-magazine-winter-2013/31>. Innovate Mississippi, 2013.
- [6] NWS Climate Services Seminar Series. *Utilizing Social Media to Understand Human Interaction with Extreme Media Events: The Superstorm Sandy Beta Test*. http://www.nws.noaa.gov/om/csd/index.php?section=seminar&page=semserContent&speaker=semser_20130716_cosby_mohanty. National Weather Service, 2013.

Invited Presentations

University of North Carolina - Greensboro

- [1] An Dinh, Stacey Miertschin, and Amber Young **Somya D Mohanty**. *A Data-driven Approach to Predicting Diabetes and Cardiovascular Disease with Machine Learning*. American Statistical Association Research Education for Undergraduates - University of North Carolina - Greensboro. July 2018.
- [2] Darpan Jhavar, Prashanti Manda, and **Somya D Mohanty**. *Big Data Analysis of Scientific Publications*. International Conference on Advances in Interdisciplinary Statistics and Combinatorics - 2018, Greensboro. Oct. 2018.
- [3] Deborah Lekan, Thomas McCoy, Prashanti Manda, **Somya D Mohanty**, Rohit Gulia, and Marjorie Jenkins. *Using Data from the EHR to Examine Frailty for Early Readmission among Hospitalized Older Adults*. International Conference on Advances in Interdisciplinary Statistics and Combinatorics - 2018, Greensboro. Oct. 2018.
- [4] Bin Luo, Qi Zhang, and **Somya D Mohanty**. *Data-Driven Exploration of Factors Affecting Federal Student Loan Repayment*. 14th International Conference on Data Science (ICDATA - 18), Las Vegas. Aug. 2018.

- [5] Prashanti Manda, Lucas Beasley, and **Somya D Mohanty**. *Taking a Dive: Experiments in Deep Learning for Automatic Ontology-based Annotation of Scientific Literature*. International Conference on Biological Ontology 2018, Corvallis, Oregon, USA. Aug. 2018.
- [6] **Somya D Mohanty**, Rohit Gulia, Deborah Lekan, Prashanti Manda, Thomas McCoy, and Marjorie Jenkins. *A Data-Driven Analysis of Patient Re-hospitalization*. International Conference on Advances in Interdisciplinary Statistics and Combinatorics - 2018, Greensboro. Oct. 2018.
- [7] **Somya D Mohanty**. *Big (Data)² Science*. The Institute for Data, Evaluation, and Analytics - University of North Carolina - Greensboro. May 2017.
- [8] **Somya D Mohanty**. *Using Humans as Sensors - Twitter and Hurricane Sandy*. Triad Developers Conference, Wake Forest, Winston Salem. Mar. 2017.
- [9] **Somya D Mohanty**. *Anomaly/Event Prediction in High-Velocity Streaming Data*. International Conference on Advances in Interdisciplinary Statistics and Combinatorics. Oct. 2016.

[Mississippi State University](#)

- [1] Arthur G. Cosby and **Somya D Mohanty**. *What do Tweets tell us?* Federal Communication Commission - Connect2Health. Feb. 2015.
- [2] **Somya D Mohanty**. *A Primer on the Use of the Social Media Tracking and Analysis System (SMTAS)*. Big Data Seminar for the Social and Policy Sciences at the Centre for Advanced Academic Studies, University of Zagreb, Dubrovnik, Croatia. July 2015.
- [3] **Somya D Mohanty**. *Emerging Analytics in Big Data Research*. Big Data Seminar for the Social and Policy Sciences at the Centre for Advanced Academic Studies, University of Zagreb, Dubrovnik, Croatia. July 2015.
- [4] Arthur G. Cosby and **Somya D Mohanty**. *Big Data and Disaster Response - The Superstorm Sandy Case Study*. Centers on the Public Service, George Mason University. Oct. 2014.
- [5] Arthur G. Cosby and **Somya D Mohanty**. *Social Media Tracking and Analysis System*. Mississippi Association of Grantmakers. Jan. 2014.
- [6] John F. Edwards, John Horton, and **Somya D Mohanty**. *Assessment of Social Media Usage during Severe Weather Events and the Development of a Twitter-based Model for Improved Communication of Storm-related Information*. Coastal Storm Awareness Program. Feb. 2014.
- [7] **Somya D Mohanty**. *Mining Twitter*. Big Data Week, Mississippi State University. Oct. 2014.
- [8] Arthur G. Cosby and **Somya D Mohanty**. *Social Media Tracking and Analysis System*. Brandeis University. Feb. 2013.
- [9] Arthur G. Cosby and **Somya D Mohanty**. *Social Media Tracking and Analysis System - Applicability in Public Health*. Harvard School of Public Health. Feb. 2013.
- [10] Arthur G. Cosby and **Somya D Mohanty**. *Social Media Tracking and Analysis System - Privacy Issues*. Harvard Law School. Feb. 2013.
- [11] Arthur G. Cosby and **Somya D Mohanty**. *Social Media Tracking and Analysis System: The Superstorm Sandy Beta Test*. Lowder Lecture Series, University of Alabama. Apr. 2013.

- [12] Arthur G. Cosby and **Somya D Mohanty**. *Utilizing Social Media to Understand Human Interaction with Extreme Media Events: The Superstorm Sandy Beta Test*. National Weather Service Climate Services Seminar Series. July 2013.
- [13] **Somya D Mohanty**. *Social Media and Tracking Analysis System (SMTAS)*. Thompson Congressional Staff Visit, SSRC. Sept. 2013.
- [14] **Somya D Mohanty**. *Social media and Understanding its Impact in Current Communication Technologies*. Guest Lecture: Information and Communication Technologies in Globalization Process, Mississippi State. Nov. 2013.
- [15] **Somya D Mohanty** and John F. Edwards. *Social Media and Tracking Analysis System (SMTAS)*. Institutional Review Board, Mississippi State University. July 2013.

Grant Activity

Awarded - University of North Carolina - Greensboro

- [1] Evan Goldstein and **Somya D Mohanty** (Co-PI). *Track II: The Coastal Processes & Machine Learning Advanced Studies Institute*. NSF IRES, \$163,600. May 2020.
- [2] Evan Goldstein and **Somya D Mohanty** (Co-PI). *Urban Environmental Sensing with TensorFlow Lite and TensorFlow Lite for Microcontrollers*. Google TensorFlow Research, \$16,000. May 2020.
- [3] Aaron Beveridge and **Somya D Mohanty** (Co-PI). *MassMine Advancement Grant for Sustainable Data-Driven Humanities Research*. Digital Humanities Advancement Grants, National Endowment for the Humanities (NEH), \$324,865. Aug. 2019.
- [4] Sat Gupta, Xiaoli Gao, and **Somya D Mohanty** (Senior-Personnel). *Complex Data Analysis*. National Science Foundation - Research Education for Undergraduates, \$295,099. Oct. 2019.
- [5] **Somya D Mohanty** (PI). *A Big Data approach towards understanding the factors responsible for scientific citations*. Microsoft Data Science Fellow, \$15,000. Dec. 2019.
- [6] Sat Gupta, **Somya D Mohanty** (Co-PI), and Xiaoli Gao. *Statistical and Machine Learning Approach to Complex Data Analysis*. American Statistical Association - REU, NSF - Grant No - 1560332, \$38,600. Aug. 2017.
- [7] Prashanti Manda, **Somya D Mohanty** (Co-PI), Shan Suthaharan, and Sujit Ghosh. *South BD Hub: A Semantic Big Data Graph of Research - Connecting Research for Knowledge. #academicgraph*. Microsoft Azure for Research, \$20,000 in Azure cloud computing credits. Oct. 2017.
- [8] **Somya D Mohanty** (PI), Fereidoon Sadri, Rick Bunch, Richard Cox, and Lynda Kellam. *Leveraging Twitter and Big Data Analytics for Natural Disaster Management and Recovery*. UNCG Giant Steps, \$25,000. Nov. 2017.
- [9] Stephen Sills, Kenneth Gruber, Jeremy Bray, and **Somya D Mohanty**(Co PI). *Homeless Prevention/ Eviction Diversion Program Pilot*. Community-Engaged Pathways and Partnerships (P^2), University of North Carolina - Greensboro, \$16,000. Nov. 2017.

Pending

- [1] **Somya D Mohanty** (PI). *CAREER: A Trustworthy Infrastructure for Decentralized Container Repository*. CISE, NSF, \$500,000. July 2020.
- [2] **Somya D Mohanty** (PI), Prashanti Manda, Evan Goldstein, and Minjeong Kim. *REU Site: Sequence Learning Neural Architectures for Multi-Disciplinary Analytics*. CISE, NSF, \$349,606. July 2020.

Denied - University of North Carolina - Greensboro

- [1] Julie Edmunds, Terri Shelton, Stephen Sills, **Somya D Mohanty** (Director of Data Systems), Kenneth Gruber, Catherine Scott-Little, and Karla Lewis. *Giant Steps for Collective Impact: A Proposal for the Evaluation Lead for an Early Childhood Initiative in Guilford County*. The Duke Endowment, \$840,288. Nov. 2017.
- [2] Xiaoli Gao, Stephen R Tate, Norman H Chiu, **Somya D Mohanty** (Senior Personnel), Ayesha Boyce, Rick Bunch, Zhengquan Jia, Matina Ruppell, Ratnasingham Shivaji, and Jianjin Wei. *IGE: Integrating Data Analytics into Graduate STEM Education*. NSF - Integrated Graduate Education, \$499,945. Oct. 2017.
- [3] Hamid Nemati, Stacy Sechrist, **Somya D Mohanty** (Senior Personnel), Prashanti Manda, and John Weil. *Big Data Analytics: A Big Weapon in Fight Against Child Abuse and Neglect*. UNCG Giant Steps, \$25,000. Nov. 2017.
- [4] **Somya D Mohanty** (PI), Prashanti Manda, and Shan Suthaharan. *Spokes: Small: South: Collaborative: Connecting Scientific Research, Enabling Knowledge Discovery, and Dissemination through a Big Data Semantic Graph*. NSF - BD Spokes - Big Data Regional Innovation Spokes, \$353,630. Oct. 2017.
- [5] Stephen Sills, **Somya D Mohanty** (Co-PI), Kenneth Gruber, Jeremy Bray, Kenneth Gruber, and Richard Cox. *Demonstration Projects for Guilford Application to MetroLab Partnership Network*. UNCG Giant Steps, \$25,000. Nov. 2017.
- [6] Shanmugathan Suthaharan and **Somya D Mohanty**(Co PI). *Collaborative Research: Research Infrastructure for Big Data*. NSF Computer & Information Science & Engineering (CISE) Research Infrastructure, \$148,901. Dec. 2016.

Awarded - Mississippi State University

- [1] **Somya D Mohanty** (PI) and Ramkumar Mahalingam. *Anomaly/Event Detection in High Velocity Streaming Data*. Idaho Bailiff Project - DASI/PNNL, \$419,960. May 2015.
- [2] Colleen Sinclair, Rebecca M. Goldberg, Megan Stubbs-Richardson, **Somya D Mohanty** (Co-PI), David May, and Tawny McLeon. *When does rejection trigger aggression? A multi-method examination of a multi-motive model*. National Institute of Justice, \$1,619,644. June 2015.
- [3] **Somya D Mohanty** (PI). *MAFES - DUI Progress Tracker*. Social Science Research Center - Mississippi State University, \$87,782. Dec. 2014.
- [4] **Somya D Mohanty** (PI). *Pathfinders Data System*. Mississippi State University, \$5,000. July 2014.
- [5] **Somya D Mohanty** (PI). *Tobacco Reporting and Progress System*. Mississippi Tobacco Control - Mississippi Department of Health, \$150,000. July 2014.
- [6] John F. Edwards, **Somya D Mohanty** (Co-PI), and Patrick FitzPatrick. *Assessment of Social Media Usage During Severe Weather Events and the Development of a Twitter-based Model for Improved Communication of Storm-related Information*. Coastal Storm Awareness Program - NOAA , \$150,000. Dec. 2013.
- [7] **Somya D Mohanty** (PI) and Arthur Cosby. *Social Media Tracking and Analysis System*. Mississippi Agricultural and Forestry Experiment Station - Mississippi State University, \$140,000. July 2013.

Denied - Mississippi State University

- [1] Arthur Cosby, **Somya D Mohanty** (Co-PI), and Gina Rico Mendez. *The Dynamics of Employment Opportunities From Volunteerism*. George Mason University, \$313,486. July 2015.
- [2] Arthur Cosby and **Somya D Mohanty** (Research Lead). *Social Crowd Based Visual Monitoring*. Rapid Response - National Science Foundation. Nov. 2015.
- [3] Drew Hamilton, **Somya D Mohanty** (Senior Personnel), Ramkumar Mahalingam, and Song Zang. *Big Data Volume and Velocity*. National Science Foundation MS EPSCoR Track 1, \$2,849,125. July 2015.
- [4] Ramkumar Mahalingam and **Somya D Mohanty** (Co-PI). *Assured Big Data Analytics*. Idaho Bailiff Project - DASI/PNNL, \$233,807. Jan. 2015.
- [5] **Somya D Mohanty** (PI) and John F. Edwards. *A Big-Data Approach Towards Food Safety Using the Human Geo-Sensor Project*. Mississippi Agricultural and Forestry Experiment Station - Mississippi State University, \$160,000. May 2015.
- [6] Guangqing Chi and **Somya D Mohanty** (Co-PI). *Transportation Resilience and Recovery*. National Science Foundation, \$386,745. June 2014.
- [7] Karen Coats, **Somya D Mohanty** (Research Scientist), and John F. Edwards. *AGEP-T Collaborative Research: Moving Forward - The AGEM Network*. National Science Foundation, \$141,149. Feb. 2014.
- [8] Arthur Cosby, **Somya D Mohanty** (Co-PI), and John F. Edwards. *Significant Event Detection Through Twitter*. Pacific Northwest National Laboratory, \$449,823. Jan. 2014.
- [9] Colleen McKee and **Somya D Mohanty** (Co-PI). *Highway Safety Data-Center*. Mississippi Highway Safety, \$226,660. June 2014.
- [10] Robert McMillen, **Somya D Mohanty** (Co-PI), and John F. Edwards. *Using Social Media to Understand and Address Substance Use and Addiction*. National Institute of Health, \$321,745. Mar. 2014.
- [11] **Somya D Mohanty** (PI). *Enhancing Community Resilience with Social Media*. Restore Act - Mississippi, \$450,000. Dec. 2014.
- [12] **Somya D Mohanty** (PI). *JDAI Detention System*. Annie E. Casey Foundation, \$17,925. Oct. 2014.
- [13] Arthur Cosby and **Somya D Mohanty** (Co-PI). *Red Team Candidate Profiler*. Army Research Center, \$273,600. Dec. 2013.
- [14] Arthur Cosby and **Somya D Mohanty** (Co-PI). *Social Media and Community Response, Resilience, and Recovery during Hurricane Sandy: Understanding and Enhancing Twitter for Emergency Response*. Assistant Secretary for Preparedness and Response Grants to Support Scientific Research Related to Recovery from Hurricane Sandy, \$499,668. May 2013.
- [15] **Somya D Mohanty** (PI). *Choctaw Demographic Study*. Mississippi Band of Choctaw Indians, \$50,000. Aug. 2013.
- [16] **Somya D Mohanty** (PI) and John F. Edwards. *Using Twitter for Syndromic Surveillance of Foodborne Illnesses*. Special Research Initiative - Mississippi Agricultural and Forestry Experiment Station, \$50,000. Oct. 2013.

Student Mentoring

Graduate Research

- [1] Darpan Jhavar, “*Big Data Analysis of Scientific Publications*”, Graduate Research Co-Mentor, Expected Fall ‘18
- [2] Rohit Gulia, “*A Data-Driven Analysis of Patient Re-hospitalization*”, Graduate Research Co-Mentor, Expected Fall ‘18
- [3] Shraddha Dafare, “*Machine-Learning based Text Search on Micro-Blog Big Data*”, Graduate Research Co-Mentor, Dec ‘17

Masters Thesis

- [4] Saed Sayedahmed, “*A Deep-Learning Based Model for Packet Based Detection of Malicious Traffic*”, Masters Thesis Mentor, Fall ‘19
- [5] Brown Biggers, “*Using Natural Language Processing for Context Based Word Similarity Matching with Neural Networks*”, Masters Project Mentor, Spring ‘19

Masters Project

- [6] Raga preethi Potu, “*Using Neural Embedding for Topic Discovery and Course Description Similarity*”, Masters Project Mentor, Expected Spring ‘21
- [7] Gowthami Chinta, “*Web Application for Massmine - A social media data capture and analysis platform, Design of Analytics*”, Masters Project Mentor, Expected Spring ‘21
- [8] Sadhana Thummalapenta, “*Web Application for Massmine - A social media data capture and analysis platform, Design of Capture*”, Masters Project Mentor, Expected Spring ‘21
- [9] Kaveri Takkellapati, “*Data Download and Dissemination (via Zenodo) for Coastal Image Labeller*”, Masters Project Mentor, Expected Fall ‘20
- [10] Unnati Khivasara, “*Machine Learning on Publication - Can we predict citations*”, Masters Project Mentor, Expected Fall ‘20
- [11] Unnati Khivasara, “*Machine Learning on Publication - Can we predict citations*”, Masters Project Mentor, Expected Fall ‘20
- [12] Amulya Yadagani, “*Tiny Machine Learning - Using accelerometer data and neural networks to predict gestures in low powered devices*”, Masters Project Mentor, Expected Fall ‘20
- [13] Amulya Yadagani, “*Tiny Machine Learning - Using accelerometer data and neural networks to predict gestures in low powered devices*”, Masters Project Mentor, Expected Fall ‘20
- [14] Himaja Avula, “*A Semantic Approach to Entity Disambiguation and Graph Analytics in Research Output*”, Masters Project Mentor, Expected Fall ‘20
- [15] Savitha Mamidiyala, “*Detecting Patient Readmission in Electronic Health Records using Natural Language Processing*”, Masters Project Mentor, Spring ‘19
- [16] Akash Meghani, “*Machine Learning Fantasy Cricket - A data-driven approach towards creating fantasy teams in cricket*”, Masters Project Mentor, Spring ‘19
- [17] Mouna Kalidindi, “*Machine learning towards filtering text during natural disasters*”, Masters Project Mentor, Spring ‘19
- [18] Richard Powell, “*Big Data Analysis of Scientific Conference Publications*”, Masters Project Mentor, Fall ‘18
- [19] Swetha Polisetty, “*Citation Normalization in Scientific Publications*”, Masters Project Mentor, Apr ‘18
- [20] Prashant Gopi, “*Quality of Life - Guildford County Analytical Dashboard*”, Masters Project Mentor, Apr ‘18
- [21] Dharani Sethuram, “*Twitter Analysis During Natural Disasters*”, Masters Project Mentor, Dec ‘17

- [22] Awantika Mahar, “*Reproducibility of Science*”, Masters Project Mentor, Dec ‘17
- [23] Duggrempudi Pavan Teja Reddy, “*Network Visualization of University Data and Implementing Search on Web-Application*”, Masters Project Mentor, Dec ‘17

Masters Project Defense Committee Member

- [24] James Stallings, “*Spartan Spyglass: Finding Real World Vulnerabilities in Commonly Used Ubuntu Source Packages*”, Masters Project Defense Committee Member, Spring ‘18
- [25] Logan Rohde, “*Information Propagation in Social Networks: Efficiently Stopping Propagation of Negative Information in Twitter*”, Masters Project Defense Committee Member, Spring ‘18
- [26] Balaram Ramala, “*Identification of Brain Tumor From MRI Scans Using Machine Learning*”, Masters Project Defense Committee Member, Fall ‘17
- [27] Manasa Konda, “*Data Preprocessing and Class Dependence on Feature Importance using Random Forest*”, Masters Project Defense Committee Member, Spring ‘17

Doctoral Committee Member

- [28] Nastaran Pourebrahim, “*Applications of Big Data in Disaster Management: A Case Study of Hurricane Sandy*”, Ph.D. Committee Member, Department of Geography, Expected Fall ‘19
- [29] Qi Zhang, “*Mean Estimation of Sensitive Variable Under Measurement Errors and Non-response*”, Ph.D. Committee Member, Department of Mathematics and Statistics, Expected Fall ‘19

Under-Graduate Research

- [30] Philip Osborn , “*Reinforcement Learning Based 16-Bit Gameplay*’, Artist in Residence Program - Llyod International Honors College - UNCG, Research Mentor, Fall ‘16 - Spring ‘18
- [31] David Santana, “*Machine Learning and Network-Security - Understanding network traffic using machine learning*’, Research Mentor, Fall ‘16 - Spring ‘18
- [32] Cory Sobol, “*Machine Learning and Network-Security - Understanding network traffic using machine learning*”, Research Mentor, Fall ‘17
- [33] Lucas Beasley, “*Leveraging Big Data and Machine Learning for Predicting Child Abuse using The National Child Abuse and Neglect Data System*”, Lucas Beasley, Lloyd International Honors College Proposal, Research Mentor, Fall - 2017 - Spring - 2018
- [34] Dylan Harbaugh, “*Large Scale Graph Analytics - Microsoft Academic Graph*”, Research Mentor, Fall ‘17 - Spring ‘18
- [35] Alex Hahn, “*Large Scale Graph Analytics - Microsoft Academic Graph*”, Research Co-Mentor, Fall ‘17 - Spring ‘18

Service

Department of Computer Science - UNCG

- Fall ‘20 - Faculty mentor UNCG Robotics Club
Present
- Fall ‘20 - Graduate Committee Member
Present
- Fall ‘18 - Under Graduate Committee Member
Spring ‘20
- Spring ‘18 - Department of Computer Science Library Liaison
Fall ‘20

- Spring '18 Faculty Search Committee Member - Department of Computer Science
- Fall '17 - Fall '20 Association for Computing Machinery - ACM Faculty Mentor
- Fall '16 - '18 Graduate Committee Member
- Fall '16 - '18 Educational Testing Service - ETS Exam Coordinator
[University of North Carolina - Greensboro](#)
- Fall '20 - Present The Institute for Data, Evaluation, and Analytics (IDEA), Co-Director
- 2017-Present UNCG Research Storage / Compute Initiative Member — Evaluating, designing, and developing data analytics related cyberinfrastructure requirements for UNCG. Lead by Dr. Dana Dunn, Donna Heath, and Dr. Terri Shelton.
- 2017-Present UNCG MS Informatics Program/Curriculum Design Member — Working with Dr. Kelly Burke and Dr. Sat Gupta for design and development of MS in Informatics and Analytics Program.
- 2018-Present UNCG MS Informatics Admissions Committee Member.
- Spring 2018 Faculty Search Committee Member - Director of MS Informatics and Analytics Program
- Spring 2018 Faculty Search Committee Member - Chief Data Scientist, University of North Carolina - Greensboro
- 2017-2018 UNCG HPC Interest Group Member — Working with UNCG, UNC-CH, and NCSU to provision HPC resources for Data Science. Lead by Gloria Thornton (Funded by UNC-System).

[Profession](#)

- 2018 Technical Program Committee Member - Computing Conference 2018 (formerly called Science and Information (SAI) Conference)
- 2018 Technical Program Committee Member - Asia-Pacific Conference on Geoscience, Electronics, and Remote Sensing Technology (AGERS 2018)
- 2018 Technical Program Committee Member - Computer Vision Conference 2019
- 2018 Technical Program Committee Member - 10th International Conference on Wireless Communications and Signal Processing (WCSP)
- 2018 Technical Program Committee Member - THE 4th International Conference on Soft Computing in Data Science - SCDS 2018
- 2018 Technical Program Committee Member - The Tenth International Conference on Advances in Future Internet - AFIN 2018
- 2018 Reviewer - Cluster Computing - The Journal of Networks, Software Tools and Applications, Springer
- 2018 Technical Program Committee Member - FTC 2018 - Future Technologies Conference 2018
- 2018 Technical Program Committee Member - Artificial Intelligence Conference 2018 | IntelliSys 2018
- 2018 Organizing Committee - International Conference on Advances in Interdisciplinary Statistics and Combinatorics 2018 - Session Chair - Big Data and Machine Learning
- 2017 Book Editor, Springer, "Security and Privacy Issues in Big Data and IOT - A Prospective Challenges in Business Intelligence"
- 2017 Technical Program Committee Member - IEEE International Conference on Communications
- 2017 Technical Program Committee Member - Computing Conference 2018
- 2017 Technical Program Committee Member - Future of Information and Communication Conference (FICC) 2018

- 2017 Technical Program Committee Member - 3rd International Conference on Soft Computing in Data Science
- 2017 Technical Program Committee Member - WCSP'17 Wireless Network Security Symposium
- 2017 Technical Program Committee Member - IEEE GLOBECOM 2017
- 2017 Technical Program Committee Member - The Ninth International Conference on Advances in Future Internet, AFIN 2017
- 2017 Technical Program Committee Member - The Science and Information Organization
- 2017 Technical Program Committee Member - International Conference on Cyber Security (ICCS) 2017
- 2017 Technical Program Committee Member - IEEE Wireless Network Security Symposium 2017

Community

- Fall 2018 Guilford County Emergency Medical Services Data Analysis - EMS, Faculty Mentor
- Fall 2018 Guilford County Financial Modeling, Faculty Mentor
- Fall 2018 City of Greensboro Enterprise Asset Management Big Data Analysis, Faculty Mentor
- 2017 - MetroLab Initiative - MetroLab Network's cities and universities are partnering on research, development, and deployment (RD&D) projects to address challenges facing urban areas: inequality in income, health, and opportunity; environmental sustainability and resiliency; and aging infrastructure, UNCG - Guildford County, Committee Member
- Present
- 2017 - Cone Health Hospital Readmission Research, Faculty Researcher
- Present
- Fall 2017 Guilford County Public Records Requests and Tracking, Faculty Mentor
- Fall 2017 Science Olympiad for Codebusters, Event Leader

Awards

- 2020 Bernard-Glickman Dean's Professors
- 2017 IEEE Senior Member.
- 2012 Information Assurance Professional Certification.
- 2009 Capture the Flag winner for Information Security
- 2005 Awarded the "Srujani" gift for creativity during summer internship at Rourkela Steel Plant for Spare Parts Management System.

Programming Skills

- Languages PYTHON, C, C++, PERL, PHP
- Databases POSTGRESQL, MYSQL, MONGODB
- Tools SCI-KIT LEARN, NUMPY, MATPLOTLIB, PLOTLY, GENSIM, NLTK, CELERY, MEMCACHE, DJANGO, FLASK, L^AT_EX

Personal Information

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