Dr. NATARAJAN MEGHANATHAN

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ACADEMIC EDUCATION

- **Doctor of Philosophy**, Computer Science, The University of Texas at Dallas, August 2002 to May 2005, GPA: 4.0/4.0; Dissertation Title: *Performance Tradeoffs for Routing in Mobile Ad hoc Networks*
- **Master of Science**, Computer Science, Auburn University, September 1998 to May 2002, GPA: 3.9/4.0
  Thesis Title: *Resource Scheduling and Load Sharing using Tickets in Mobile Computing Environments*
- **Bachelor of Technology**, Chemical Engineering, Anna University, India, August 1994 to May 1998, GPA: 9.2/10.0

POSITIONS AT A GLANCE

- **Full Professor (tenured),** Department of Computer Science, Jackson State University, Jackson, MS, July 2015 – Present
- **Associate Professor (tenured),** Department of Computer Science, Jackson State University, Jackson, MS, July 2011 – June 2015
- **Summer Faculty Fellow,** Air Force Research Lab, Dayton, OH: RYWC, Distributed Collaborative Sensor Systems Technology Branch, June – July 2012
- **Assistant Professor (tenure-track),** Department of Computer Science, Jackson State University, Jackson, Mississippi, August 2005 – June 2011
- **Graduate Teaching Assistant**, Department of Computer Science, University of Texas at Dallas, Richardson, Texas, September 2002 – May 2005
- **Graduate Research Assistant**, Department of Computer Science, Auburn University, Auburn, AL, August 2000 – May 2002
- **Graduate Research/ Teaching Assistant**, Department of Chemical Engineering, Auburn University, Auburn, AL, September 1998 – June 2000

TEACHING INTERESTS

Network Science, Computer Networks, Wireless Networks, Computer and Network Security, Software Security, Graph Theory, Algorithm Design and Analysis, Object-Oriented Programming, Machine Learning

RESEARCH INTERESTS

Network Science and Graph Theory Algorithms, Wireless Ad hoc Networks and Sensor Networks, Cyber Security, Data Mining and Machine Learning, Cloud Computing

NEW COURSES DEVELOPED AT JACKSON STATE UNIVERSITY

- **Undergraduate:** CSC 423 Algorithms for Bioinformatics; CSC 434 Network Science; CSC 436 Wireless Networks; CSC 437 Computer Security; CSC 438 Systems and Software Security; CSC 439 Advanced Information Security

- **Graduate:** CSC 525 Wireless Ad hoc Networks; CSC 541 Cryptography and Network Security; CSC 561 Graduate Capstone Project; CSC 582 Social Network Analysis; CSC 601 Computing Algorithms; CSC 621 Machine Learning; CSC 634 Big Data Mining; CSC 635 Big Data for Cyber Security; CSC 641 Network Science; CSC 539 Advanced Data Analytics, CSC 539 Combinatorics and Graph Theory

COURSES TAUGHT AT JACKSON STATE UNIVERSITY

#	Course Name	Undergraduate	Graduate	# Semesters	Newly Developed
1	CSC/L 118 Programming Fundamentals	X (Freshman)		3	
2	CSC 211 Object-Oriented Programming	X (Sophomore)		1	
3	CSC 228 Data Structures & Algorithms	X (Sophomore)		8	
4	CSC 323 Algorithm Design & Analysis	X (Junior)		23	
5	CSC 435 Computer Networks	X (Senior)		20	
6	CSC 437 Computer Security	X (Senior)	X	1	X
7	CSC 438 Systems and Software Security	X (Senior)	X	2	X
8	CSC 439 Adv. Information Security	X (Senior)	X	3	X
9	CSC 499 Algorithms for Bioinformatics	X (Senior)	X	1	X
10	CSC 515 Data Structures & Algorithms / CSC 601 Computer Algorithms		X	5	
11	CSC 524 Computer Communication Networks and Distributed Processing		X	9	
12	CSC 525 Wireless Ad hoc Networks		X	2	X
13	CSC 539 Special Topics: Computational Epidemiology		X	1	X
14	CSC 539 Special Topics: Advanced Data Analytics		X	1	X
15	CSC 539 Special Topics: Combinatorics and Graph Theory		X	1	X
16	CSC 541 Cryptography and Network Security		X	2	X
17	CSC 582 Social Network Analysis	X (Senior)	X	2	X
18	CSC 641 Network Science	X (Senior)	X	10	X

EXTERNALLY FUNDED GRANTS

- **Title:** Extracting Forensic Event Signatures Using Network Science Techniques; **Role:** ***Principal Investigator***; **Funding Agency:** Maritime Florida International University/Department of Army; **Period**: 05/01/2021 to 04/31/2026; **Amount**: $225,000.
- **Title:** Global Pervasive Computational Epidemiology; **Role:** ***Principal Investigator***; **Funding Agency:** University of Virginia; **Period**: 04/01/2020 to 03/31/2025; **Amount**: $40,000.
- **Title:** Collaborative Research: Framework: Software: CINES: A Scalable Cyberinfrastructure for Sustained Innovation in Network Engineering and Science; **Role:** ***Principal Investigator***; **Funding Agency:** National Science Foundation; **Award #:** 1835439; **Period**: 10/31/2018 to 10/30/2023; **Amount**: $40,000.
- **Title:** Network Science-based Analysis of the US Marine Highway Network and a Random Graph Model for the Intermodal Port Network; **Role:** ***Principal Investigator***; **Funding Agency:** Maritime Transportation Research and Education Center, University of Arkansas; **Period**: 12/01/2021 to 05/31/2023; **Amount**: $65,000.

- **Title:** Open Educational Resources: Course Improvement; **Role:** ***Principal Investigator***; **Funding Agency:** University of Mississippi; **Period**: 12/01/2021 to 06/31/2022; **Amount**: $4,000.
- **Title:** CC* Networking Infrastructure: Jackson State University (JSU)-Research Network; **Role:** ***Co-Principal Investigator***; **Funding Agency:** National Science Foundation; **Award #**: 1827098; **Period**: 07/01/2018 to 06/30/2022; **Amount**: $500,000.
- **Title:** Minority Leaders Research Collaboration Program, A Stable Trustworthy Neighborhood Scheme for Secure Mobile Sensor Networks; **Role:** ***Principal Investigator***; **Funding Agency:** Clarkson Aerospace/US Air Force; **Subcontract #**: JACK 15-S7700-02-C2; **Period**: 01/15/2016 to 11/30/2018; **Amount**: $200,000.
- **Title:** A New Paradigm for Efficient Space Communications: Rateless Coding with Unequal Error Control and Data Fusion; **Role:** Co-Principal Investigator (Overall) **/** ***Principal Investigator*** (JSU Sub-contract); **Funding Agency:** National Aeronautics and Space Administration (NASA) Experimental Program to Stimulate Competitive Research (EPSCoR) Program **/** University of Mississippi; **Period:** 09/01/2014 to 08/31/2017; **Amount:** $135,000 (JSU Sub-contract) **/** $ 750,000 (Overall).
- **Title:** Science Curriculum Development: A Course on Algorithms for Bioinformatics; **Role:** ***Principal Investigator***; **Funding Agency:** MS-INBRE Program, National Institutes of Health (NIH) **/** University of Southern Mississippi; **Subcontract #**: USM-GR05067-10; **Period**: 06/01/2014 to 05/31/2015; **Amount**: $25,000.
- **Title:** Minority Leaders Program, Cyber-Security Research for Distributed Sensor Systems and Cloud Computing Applications; **Role:** ***Principal Investigator***; **Funding Agency:** Clarkson Aerospace/US Air Force; **Subcontract #**: JACK 13-S567-020-02-C2; **Period**: 11/26/2012 to 12/30/2013; **Amount**: $75,000.
- **Title:** Incorporating Systems Security and Software Security in Senior Projects, **Role:** ***Principal Investigator***; **Funding Agency:** National Science Foundation. **Grant Number:** DUE-0941959; **Period:** 09/15/2010 to 08/31/2014. **Amount:** $ 199,986 [Co-PIs: L. Moore and H. Kim].
- **Title:** SDCI NMI: From Desktops to Clouds; **Role:** ***Faculty Investigator***; **Funding Agency:** National Science Foundation **/** Virginia Tech; **Subcontract #**: 478455-19A87; **Period**: 09/01/2013 to 08/31/2014; **Amount**: $30,000 [JSU PI: R. Alo].
- **Title:** Modeling and Simulation of Complex Systems, **Role:** ***Senior Personnel***; **Funding Agency:** National Science Foundation. **Grant #:** NSF EPS-09-3787; **Period:** 09/01/2009 to 08/31/2014; **Amount:** $20,000,000 [2-summer months salary for 2010 and 2011, One-summer month salary for 2012].
- **Title:** REU Site: Undergraduate Research Program in Wireless Ad hoc Networks and Sensor Networks; **Role:** ***Principal Investigator***; **Funding Agency:** National Science Foundation; **Grant Number:** CNS-0851646; **Period:** 01/15/2009 to 12/31/2012. **Amount:** $ 319,989 [Co-PI: L. Moore].
- **Title:** Routing Protocols to Minimize the Number of Route Disconnections for Communication in Mobile Ad hoc Networks; **Role:** ***Principal Investigator***; **Funding Agency:** Army Research Lab; **Grant Number:** W911NF-08-2-0061; **Period:** 10/01/2008 to 09/30/2009. **Amount:** $ 99,691.

INTERNALLY FUNDED GRANTS

- **Title:** A Framework to Detect the Presence of Radiological Dispersal Devices (RDDs) using Wireless Sensor Networks; **Role:** ***Faculty Investigator***; **Funding Agency:** Jackson State University Massie Chair Program [PI: Alo]; **Period:** 02/2014 to 08/2015. [One month Summer salary for 2014 and 2015; Two students to work with].

- **Title:** Risk Assessment, Identification and Notification (RAIN) System; **Role:** ***Co-Principal Investigator***; **Funding Agency:** Jackson State University - Institute for Multi-Modal Transportation; **Period:** 07/01/2008 to 05/30/2009. **Amount:** $49,977 [PI: G. Skelton].
- **Title:** Development of a Location Prediction Based On-Demand Routing Protocol to Minimize the Number of Route Discoveries and Hop Count per Path in Mobile Ad Hoc Networks; **Role:** ***Principal Investigator***; **Funding Agency:** Jackson State University - Center for University Scholars; **Period:** 06/01/2008 to 07/31/2008. **Amount:** $10,000.

FUNDED RESEARCH AND TEACHING AWARDS

- **Summer Faculty Fellowship:** "AF SFFP: A Benchmarking Algorithm to Determine the Sequence of Stable Data Gathering Trees for Wireless Mobile Sensor Networks," funded by the **American Society for Engineering Education/US Air Force Office of Scientific Research**. Program Number/Project: 13.35.01.B6851: Secure, Reliable, and Responsive Distributed Sensor Networks. Project Performed at: AFRL/RY Wright Patterson AF Base, Ohio; Award Period: 06/04/2012 to 07/27/2012. Amount: $12,000.
- **Fall-2013 Early Adopter Award**: "Distributed Computing and Programming in the Undergraduate Algorithms, Networks and Security Courses at Jackson State University," funded by the **NSF/IEEE-TCPP Curriculum Initiative on Parallel and Distributed Computing – Core Topics for Undergraduates: Fall Early Adopter Program**. Funded through: Georgia State University; Award Period: 08/2013 to 12/2013. Award Amount: $2,000.
- **Creative Award for Faculty and Staff:** "Design and Development of a Local Spectrum Knowledge-based Minimal Channel Switch Routing Protocol for Cognitive Radio Ad hoc Networks," funded by the **Jackson State University *Creative Awards for Faculty and Staff* (CAFS)** Program. Award Amount: $5,000; Award Period: January 2014 to December 2014.

AWARDS, HONORS & CERTIFICATIONS

- **Faculty Excellence Award in Computer Science,** Jackson State University for Academic Year 2013-14.
- **Jackson State University Faculty Honoree** for the **Mississippi Institutions of Higher Learning HEADWAE Best Faculty Award**, Year: 2010.
- **Best Faculty Award for Research in Computer Science awarded** by the College of Science, Engineering and Technology, Jackson State University, Calendar Year: 2008.
- **Listed in Marquis Who's Who in America, 2009 edition**
- **Nominated** (by the Department of Computer Science, Jackson State University) for the **Mississippi Institutions of Higher Learning HEADWAE Best Faculty Award**, Period Covered: June 2007 – May 2008; June 2008 – May 2009; June 2009 – May 2010.
- **ACM-Southeast Conference Best Paper Award**, won 1st place among 244 papers, for the paper on the stability of multicast Steiner trees in mobile ad hoc networks, March 2006
- **Certificate of Appreciation**, presented by the ACM Students Chapter, Jackson State University, Jackson, Mississippi, April 2006.
- **Certificate in Forensics Training**, completed the CF-101 Introduction to Cyber Crime in January 2007 and CF-102 Forensics Tools and Techniques Workshop in August 2007
- **Certificate in Metadata Training**, completed the "Introduction to Geospatial Metadata" training, offered by National Oceanic and Atmospheric Administration, November 2007
- **Certificate in Graduate Information Assurance Program**, University of Texas at Dallas, 2004
- **Cisco Certified Network Associate**, score: 90%, April 2001
- **Sun Certified Programmer** for Java 2 Platform, score: 88%, February 2001
- **Presidential Graduate Fellowship**, Auburn University, 1998-99, 2001-02

SCIENTIFIC PUBLICATIONS

BOOKS

[B6] **N. Meghanathan** (author and editor), Strategic Innovations and Interdisciplinary Perspectives in Telecommunications and Networking, 15 chapters (348 pages), IGI Global Publishers, Hershey, PA, USA, February 2019, ISBN: 9781522581888.

[B5] **N. Meghanathan** (author), Centrality Metrics for Complex Network Analysis: Emerging Research and Opportunities, 7 chapters (183 pages), IGI Global Publishers, Hershey, PA, USA, April 2018, ISBN: 9781522538028.

[B4] **N. Meghanathan** (editor), Graph Theoretic Approaches for Analyzing Large-Scale Social Networks, 17 chapters (355 pages), IGI Global Publishers, Hershey, PA, USA, July 2017, ISBN: 9781522528142.

[B3] **N. Meghanathan** (editor), Advanced Methods for Complex Network Analysis, 17 chapters (427 pages), IGI Global Publishers, Hershey, PA, USA, April 2016, ISBN: 9781466699649.

[B2] **N. Meghanathan** (author and editor), Recent Advances in Ad Hoc Networks Research, 10 chapters (234 pages), Nova Publishers, New York, USA, August 2014, ISBN: 978-1-63321-337-1.

[B1] **N. Meghanathan** (author and editor) and Y. B. Reddy (author and editor), Cognitive Radio Technology Applications for Wireless and Mobile Ad hoc Networks, 15 chapters (370 pages), IGI Global Publishers, Hershey, PA, USA, June 2013, ISBN: 978-1-46664-221-8.

BOOK CHAPTERS

[BC22] **N. Meghanathan**, "Canonical Correlation Analysis and Exploratory Factory Analysis of the Four Major Centrality Metrics," Chapter 4, pp. 51-71, *Big Data, Data Mining and Data Science*, Dimitoglou, G., Deligiannidis, L., R. Arabnia, H. and P. Tafti, A. Eds. De Gruyter, 2024.

[BC21] **N. Meghanathan**, "Binary Search Approach for Largest Cascade Capacity of Complex Network," Chapter 150, pp. 2500-2513, *Encyclopedia of Data Science and Machine Learning*, Editor: John Wang, IGI, June 2022.

[BC20] **N. Meghanathan** and M. Terrell, "Design of a Secure Framework for Session Mobility as a Service in Cloud Computing Environment," Chapter 27, pp. 475-490, *Computer and Network Security Essentials*, Editor: Kevin Daimi, Springer, 2018.

[BC19] **N. Meghanathan**, "Biometrics for User Authentication," Chapter 18, pp. 317-335, *Computer and Network Security Essentials*, Editor: Kevin Daimi, Springer, 2018.

[BC18] **N. Meghanathan**, "A Graph Intersection-based Algorithm to Determine Maximum Lifetime Communication Topologies for Cognitive Radio Ad hoc Networks," Chapter 567, *Encyclopedia of Information Science and Technology*, Editor: Mehdi Khosrow-Pour, IGI Global, 2017.

[BC17] **N. Meghanathan**, "Clique Size and Centrality Metrics for Analysis of Real-World Network Graphs," Chapter 565, *Encyclopedia of Information Science and Technology*, Editor: Mehdi Khosrow-Pour, IGI Global, 2017.

[BC16] **N. Meghanathan**, "Centralized and Distributed Algorithms for Stable Communication Topologies in Cognitive Radio Ad hoc Networks," Chapter 6, pp. 153-182, *Spectrum Access and Management for Cognitive Radio Networks*, Editor: Mohammad A. Matin, Springer, 2017.

[BC15] **N. Meghanathan**, "Diameter-Aggregation Delay Tradeoff for Data Gathering Trees in Wireless Sensor Networks," Chapter 10, pp. 239-255, *Handbook of Research on Wireless Sensor Network Trends, Technologies, and Applications*, Editor: Narendra Kumar Kamila, IGI Global, July 2016.

[BC14] **N. Meghanathan**, "Eigenvector Centrality-Based Mobile Target Tracking in Wireless Sensor Networks," Chapter 16, pp. 394-411, *Handbook of Research on Wireless Sensor Network Trends, Technologies, and Applications*, Editor: Narendra Kumar Kamila, IGI Global, July 2016.

[BC13] **N. Meghanathan**, "Impact of the Structure of the Data Gathering Trees on Node Lifetime and Network Lifetime in Wireless Sensor Networks," Chapter 7, pp. 192-204, *Handbook of Research on Advanced*

Wireless Sensor Network Applications, Protocols, and Architectures, Editors: Niranjan Ray and Ashok Turuk, IGI Global, July 2016.

[BC12] **N. Meghanathan**, "Distributed Data Gathering Algorithms for Mobile Sensor Networks," Chapter 13, pp. 329-359, *Emerging Communication Technologies Based on Wireless Sensor Networks: Current Research and Future Applications*, Editors: Mubashir Husain Rehmani and Al-Sakib Khan Pathan, CRC Press, April 2016.

[BC11] **N. Meghanathan**, "A Pairwise Key Distribution Mechanism and Distributed Trust Evaluation Model for Secure Data Aggregation in Mobile Sensor Networks," Chapter 12, pp. 299-328, *Emerging Communication Technologies Based on Wireless Sensor Networks: Current Research and Future Applications*, Editors: Mubashir Husain Rehmani and Al-Sakib Khan Pathan, CRC Press, April 2016.

[BC10] **N. Meghanathan**, "Virtualization as The Catalyst for Cloud Computing," Chapter 105, pp. 304-320, *Encyclopedia of Information Science and Technology, Third Edition*, Editor: Mehdi Khosrow-Pour, ISBN: 1466658886, DOI: 10.4018/978-1-4666-5888-2, IGI Global Publishers, Hershey, PA, USA, July 2014.

[BC9] **N. Meghanathan**, "Algorithms to Determine Stable Connected Dominating Sets for Mobile Ad hoc Networks," Chapter 9, pp. 249-274,*Wireless Communications and Networking: Theory and Practice*, Editor: M. Matin, ISBN: 1466651709, DOI: 10.4018/978-1-4666-5170-8.ch009, IGI Global Publishers, Hershey, PA, USA, February 2014.

[BC8] **N. Meghanathan** and P. Mumford, "Graph Intersection-based Benchmarking Algorithm for Maximum Stability Data Gathering Trees in Wireless Mobile Sensor Networks," Chapter 17, pp. 433-458, *Wireless Communications and Networking: Theory and Practice*, Editor: M. Matin, ISBN: 1466651709, DOI: 10.4018/978-1-4666-5170-8.ch017, IGI Global Publishers, Hershey, PA, USA, February 2014.

[BC7] **N. Meghanathan**, "Network Security: Attacks and Controls," Chapter 11, pp. 174-203, *Network Security Technologies: Design and Applications*, Editors: A. Amine, O. Ait Mohamed and B. Benatallah, ISBN: 1466647892, IGI Global Publishers, Hershey, PA, USA, November 2013.

[BC6] **N. Meghanathan**, "Data Gathering Algorithms for Wireless Sensor Networks," Chapter 13: pp. 353-376, *Wireless Sensor Networks: Current Status and Future Trends*, Editors: S. Khan, A-S. Khan Pathan and N. A. Alrajeh, ISBN: 978-1-4665-0606-0, CRC Press, Taylor & Francis Group, USA, November 2012.

[BC5] **N. Meghanathan**, "Topology-based Classification of Multicast Routing Protocols for Mobile Ad hoc Networks," Chapter 7: pp. 116-143, *Technological Advancements and Applications in Mobile Ad hoc Networks: Research Trends*, Editor: Kamaljit Lakhtaria, ISBN: 978-1-4666-0321-9, IGI Global Publishers, Hershey, PA, USA, March 2012.

[BC4] **N. Meghanathan** and A. R. Geoghegan, "A Case Study on Testing for Software Security: Static Code Analysis of a File Reader Program Developed in Java," Chapter 5: pp. 89-112, *Advanced Automated Software Testing*: *Frameworks for Refined Practice*, Editor: Izzat Alsmadi, ISBN: 978-1-4666-0089-8, 270 pages, IGI Global Publishers, Hershey, PA, USA, January 2012. [*Publication as part of the NSF CCLI/TUES Grant*]

[BC3] **N. Meghanathan,** "Applications of Graph Theory Algorithms in Mobile Ad hoc Networks," Chapter 4: pp. 98-125, *Mobile Computing Techniques in Emerging Markets: Systems, Applications and Services*, Editors: A. V. Senthil Kumar and Hakikur Rehman, 358 pages, IGI Global Publishers, Hershey, PA, USA, January 2012.

[BC2] **N. Meghanathan,** "A Location Prediction Based Routing Protocol and its Extensions for Multicast and Multi-path Routing in Mobile Ad hoc Networks," Chapter 12: pp. 217-242, *Mobile Ad-Hoc Networks: Protocol Design*, Editor: Xin Wang, ISBN: 978-953-307-402-3, 656 pages, In-Tech Education and Publishing, Vienna, Austria, January 2011.

[BC1] **N. Meghanathan**, "Greedy Algorithms to Determine Stable Paths and Trees in Mobile Ad hoc Networks," Chapter 14: pp. 253-272, *Advances in Greedy Algorithms*, Editor: Witold Bednorz, ISBN: 978-953-7619-27-5, 586 pages, In-Tech Education and Publishing, Vienna, Austria, November 2008.

REFEREED JOURNALS

*undergraduate student co-authors, ^graduate student co-authors, +faculty/other collaborators as co-authors

[J106] **N. Meghanathan**, "Principal Components-based Quantification of Hierarchical K-Core Assortativity," *Social Network Analysis and Mining*, vol. 14, no. 132, pp. 1-13, July 2024.

[J105] **N. Meghanathan**, "Principal Components and Assortativity-based Assessment of the Similarity of Crime Metrics across Coterminous Wards in the City of Chicago," *Computer and Information Science*, vol. 17, no. 1, pp. 36-48, April 2024.

[J104] **N. Meghanathan**, "Assortativity Analysis of Complex Real-World Networks using the Principal Components of the Centrality Metrics," *International Journal of Data Science*, vol. 9, no, 1, pp. 79-97, 2024.

[J103] **N. Meghanathan**, "Quantifying the Theory vs. Programming Disparity using Spectral Bipartivity Analysis and Principal Component Analysis," *International Journal of Computer Science and Information Technology*, vol. 14, no. 5, pp. 1-15, October 2022.

[J102] **N. Meghanathan**, "A Comprehensive Analysis of the Correlation between Maximal Clique Size and Centrality Metrics for Complex Network Graphs," *Egyptian Informatics Journal*, vol. 22, no. 3, pp. 339-355, September 2021.

[J101] **N. Meghanathan**, A. Essien* and R. Lawrence*, "A two-hop neighbor preference-based random network graph model with high clustering coefficient for modeling real-world complex networks," *Egyptian Informatics Journal*, vol. 22, no. 3, pp. 389-400, September 2021.

[J100] **N. Meghanathan**, "Neighborhood-based Bridge Node Centrality Tuple for Complex Network Analysis," *Springer Applied Network Science*, vol. 6, no. 47, pp. 1-36, June 2021.

[J99] **N. Meghanathan**, "Exploring the Step Function Distribution of the Threshold Fraction of Adopted Neighbors vs. Minimum Fraction of Nodes as Initial Adopters to Assess the Cascade Blocking Intra-Cluster Density of Complex Real-World Networks," *Springer Applied Network Science*, vol. 5, no. 97, pp. 1-33, December 2020.

[J98] **N. Meghanathan**, "A Binary Search Algorithm to Determine the Minimum Transmission Range for Minimum Connected Dominating Set of a Threshold Size in Ad hoc Networks," *International Journal of Wireless Networks and Broadband Technologies*, vol. 9, no. 2, pp. 1-16, 2020.

[J97] **N. Meghanathan**, "Relative Assortativity Index: A Quantitative Metric to Assess the Impact of Link Prediction Techniques on Assortativity of Complex Networks," *The Computer Journal*, vol. 63, no. 9, pp. 1417-1437, September 2020.

[J96] **N. Meghanathan**, "Edge Similarity Index for Complex Network Analysis," International Journal of Combinatorial Optimization Problems and Informatics, vol. 11, no. 3, pp. 76-96, September-December 2020.

[J95] **N. Meghanathan**, "An Ensemble Approach to Analyze Mobile Sensor Networks," *International Journal of Mobile Network Design and Innovation*, vol. 9, no. 3/4, pp. 142-152, 2019.

[J94] **N. Meghanathan**, "Centrality and Partial Correlation Coefficient-based Assortativity Analysis of Real-World Networks," *The Computer Journal*, vol. 62, no. 9, pp. 1247-1264, September 2019.

[J93] **N. Meghanathan**, "Unit Disk Graph-based Node Similarity Index for Complex Network Analysis," *Hindawi Complexity*, vol. 2019, Article ID: 6871874, 22 pages, March 2019.

[J92] **N. Meghanathan**, "δ-Space for Real-World Networks: A Correlation Analysis of Decay Centrality vs. Degree Centrality and Closeness Centrality," *Elsevier Journal of King Saud University - Computer and Information Sciences*, vol. 30, no. 3, pp. 391-403, July 2018.

[J91] **N. Meghanathan**, "Complex Network Analysis-based Graph Theoretic Metrics to Determine Stable Data Gathering Trees for Mobile Sensor Networks," *The Computer Journal*, vol. 61, no. 2, pp. 199-222, February 2018.

[J90] **N. Meghanathan**, "A Location and Mobility Independent Scheme to Quantify the Neighborhood Stability of a Node in Mobile Sensor Networks," *International Journal of Mobile Network Design and Innovation*, vol. 8, no. 2, pp. 111-125, January 2018. [Publication as part of the AFRL/Clarkson Aerospace Grant].

[J89] M. Akhter^, Md. Rahman^ and **N. Meghanathan**, " A Spectral Analysis and Network Science Approach to Identify Influential Diseases based on Disease-Gene Associations," International Journal of Network Science, vol. 1, no. 4, pp. 325-343, 2017.

[J88] **N. Meghanathan**, "Randomness Index for Complex Network Analysis," *Springer Social Network Analysis and Mining*, vol. 7, no. 25, pp. 1-15, December 2017.

[J87] **N. Meghanathan**, "On the Use of Centrality Measures to Determine Connected Dominating Sets for Mobile Ad hoc Netwoks," *International Journal of Ad Hoc and Ubiquitous Computing*, vol. 26, no. 4, pp. 205-221, October 2017. [*Publication as part of the NASA EPSCoR Sub Award*]

[J86] **N. Meghanathan**, "An Analysis of the Fat-Tailedness of the Centrality Distributions of Real-World Networks," *International Journal of Computer Networks and Communications*, vol. 9, no. 5, pp. 1-15, September 2017.

[J85] **N. Meghanathan**, "Link Selection Strategies based on Network Analysis to Determine Stable and Energy-Efficient Data Gathering Trees for Mobile Sensor Networks," *Elsevier Ad Hoc Networks*, vol. 62, pp. 50-75, July 2017. [*Publication as part of the AFRL/Clarkson Aerospace Grant*]

[J84] **N. Meghanathan**, "Evaluation of Correlation Measures for Computationally-Light vs. Computationally-Heavy Centrality Metrics on Real-World Graphs," *Journal of Computer and Information Technology*, vol. 25, no. 2, pp. 103-132, June 2017.

[J83] **N. Meghanathan**, "A Binary Search Algorithm for Correlation Study of Decay Centrality vs. Degree Centrality and Closeness Centrality," *Computer and Information Science*, vol. 10, no. 2, pp. 52-75, June 2017.

[J82] **N. Meghanathan**, "Curriculum Network Graph: Relative Contribution of Courses," *Inderscience International Journal of Network Science*, vol. 1, no. 3, pp. 223-247, 2017.

[J81] **N. Meghanathan**, "Local Clustering Coefficient-based Assortativity Analysis of Real-World Network Graphs," *Inderscience International Journal of Network Science*, vol. 1, no. 3, pp. 187-208, 2017.

[J80] **N. Meghanathan**, " Complex Network Analysis of the Contiguous United States Graph," *Computer and Information Science*, vol. 10, no. 1, pp. 54-76, February 2017.

[J79] **N. Meghanathan**, "A Computationally-Lightweight and Localized Centrality Metric in lieu of Betweenness Centrality for Complex Network Analysis," *Springer Vietnam Journal of Computer Science*, vol. 4, no. 1, pp. 23-38, February 2017.

[J78] **N. Meghanathan**, "An Eigenvector Centrality-based Mobile Target Tracking Algorithm for Wireless Sensor Networks," *International Journal of Mobile Network Design and Innovation*, vol. 6, no. 4, pp. 202-211, December 2016.

[J77] **N. Meghanathan** and X. He^, "Correlation and Regression Analysis for Node Betweenness Centrality," *International Journal of Foundations in Computer Science and Technology*, vol. 6, no. 6, pp. 1-20, November 2016.

[J76] **N. Meghanathan**, "Maximal Assortative Matching for Real-World Network Graphs, Random Network Graphs and Scale-Free Network Graphs," *Springer Vietnam Journal of Computer Science*, vol. 3, no. 3, pp. 151-179, August 2016.

[J75] **N. Meghanathan**, "Assortativity Analysis of Real-World Network Graphs based on Centrality Metrics," *Computer and Information Science*, vol. 9, no. 3, pp. 7-25, August 2016. Link DOI

[J74] **N. Meghanathan**, "On the Sufficiency of using the Degree Sequence of the Vertices to Generate Random Networks Corresponding to Real-World Networks," *Polibits: Research Journal on Computer Science and Computer Engineering with Applications*, vol. 53, pp. 5-21, July 2016.

[J73] **N. Meghanathan**, "Eigenvector Centrality-based Stable Path Routing for Cognitive Radio Ad hoc Networks," *International Journal of Network Science*, vol. 1, no. 2, pp. 117-133, June 2016.

[J72] **N. Meghanathan**, "Maximal Assortative Matching and Maximal Dissortative Matching for Complex Network Graphs," *The Computer Journal*, vol. 59, no. 5, pp. 667-684, May 2016.

[J71] **N. Meghanathan**, "Correlation Analysis between Maximal Clique Size and Centrality Metrics for Random Networks and Scale-Free Networks," *Computer and Information Science*, vol. 9, no. 2, pp. 41-57, May 2016.

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[C69] **N. Meghanathan** and M. Fanuel, "A Minimum Channel Switch Routing Protocol for Cognitive Radio Ad hoc Networks," Proceedings of the *12th International Conference on Information Technology*: *New Generations*, pp. 280-285, Las Vegas, USA, April 13-15, 2015. [*Publication as part of the JSU 2014 Creative Awards for Faculty and Staff Program*]

[C68] **N. Meghanathan**, "Using Spectral Radius Ratio for Node Degree to Analyze the Evolution of Scale-Free Networks and Small-World Networks," Proceedings of the *2nd International Conference on Computer Science and Information Technology*, pp. 21-28, Geneva, Switzerland, March 21-22, 2015.

[C67] **N. Meghanathan**, "A Benchmarking Algorithm to Determine Maximum Lifetime Communication Topologies in Cognitive Radio Ad hoc Networks," ACM Proceedings of the *International Conference on Advanced Research in Computer Science Engineering & Technology*, Eluru, Andhra Pradesh, India, March 6-7, 2015, DOI: 10.1145/2743065.2743069.

[C66] **N. Meghanathan**, "Use of Eigenvalues and Eigenvectors to Analyze Bipartivity of Network Graphs," Proceedings of the *International conference on Computer Science, Engineering and Information Technology,* pp. 221-230, Sydney, Australia, December 27-28, 2014.

[C65] **N. Meghanathan**, "Spectral Radius as a Measure of Variation in Node Degree for Complex Network Graphs," Proceedings of the *3rd International Conference on Digital Contents and Applications*, Hainan, China, December 20-23, 2014.

[C64] **N. Meghanathan**, "A Distributed Trust Evaluation Model for Wireless Mobile Sensor Networks," Proceedings of the *11th International Conference on Information Technology: New Generations* , ITNG, pp. 186-191, Las Vegas, NV, USA, April 2014.

[C63] **N. Meghanathan** and P. Mumford+, "Node Failure Time Analysis for Maximum Stability Vs Minimum Distance Spanning Tree based Data Gathering in Mobile Sensor Networks," Proceedings of *The Fifth International Conference on Networks & Communications*, NETCOM-2013, Chennai, India, December 27-29, 2013, published in Springer Lecture Notes in Electrical Engineering, LNEE 284, pp. 55-68, DOI: 10.1007/978-3-319-03692-2_5.

[C62] **N. Meghanathan**, "Design of a Secure Data Aggregation Framework for Wireless Mobile Sensor Networks," *Proceedings of the ISCA 26th International Conference on Computer Applications in Industry and Engineering*, (CAINE-2013), September 25-27, 2013, Los Angeles, USA. [*Publication as part of the Clarkson Aerospace/AFRL Subcontract*]

[C61] **N. Meghanathan** and M. Terrell^, "Design of a Secure Framework for Session Mobility as a Service in Cloud Computing Environment," *Proceedings of the ISCA International Conference on Advanced Computing and Communications*, ACC-2013, Los Angeles, September 2013. [*Publication as part of the Clarkson Aerospace/AFRL Subcontract*]

[C60] **N. Meghanathan** and I. Dasari^, "A Generic Algorithm to Determine Connected Dominating Sets for Mobile Ad hoc Networks and Performance Evaluation under Different Mobility Models," *Fifth International workshop on Networks & Communications*, NeCoM, Proceedings of the Computer Science and Information Technology Series, vol. 3, no.4, pp. 239-248, July 27, 2013, Chennai, India. DOI: 10.5121/csit.2013.3425.

[C59] H. Kim+, **N.Meghanathan** and L. Moore+, "Enhancement of an Undergraduate Software Engineering Course by Infusing Security Lecture Modules," *Proceedings of the 7th International Multi-Conference on Society, Cybernetics and Informatics: IMSCI 2013*, July 9-12, 2013, Orlando, FL, USA. [*Publication as part of the NSF CCLI/TUES Grant*]

[C58] **N. Meghanathan**, "A Critical Review of the Routing Protocols for Cognitive Radio Networks and a Proposal for Load Balancing Local Spectrum Knowledge-based Routing," *Fifth International Conference on Wireless and Mobile Networks*, WiMoN, published in Springer CCIS series, vol. 367, pp. 1-12, Istanbul, Turkey, June 1-2, 2013.

[C57] **N. Meghanathan**, "Review of Access Control Models for Cloud Computing," Proceedings of the *Third International Conference on Computer Science, Engineering & Applications* , ICCSEA, Chennai, India, pp. 77-85, May 24-26, 2013. DOI : 10.5121/csit.2013.3508.

[C56] **N. Meghanathan** and P. D. Mumford[+], "A Benchmarking Algorithm to Determine Maximum Stability Data Gathering Trees for Wireless Mobile Sensor Networks," *10th International Conference on Information Technology: New Generations* , ITNG, pp. 492-497, Las Vegas, NV, USA, April 15-17, 2013. [*Publication as part of the AFOSR/AFRL/SFFP 2012 Research*]

[C55] M. Terrell[^] and **N. Meghanathan**, "Setting up of a Cloud Cyber Infrastructure using Xen Hypervisor," *Proceedings of the 10th International Conference on Information Technology: New Generations* , ITNG, pp. 648-652, Las Vegas, NV, USA, April 15-17, 2013.**[Publication as part of the NSF CCLI/TUES Grant]**

[C54] **N. Meghanathan**, "Source Code Analysis of a Connection-Oriented File Reader Server Socket Program in Java and Removal of the Security Vulnerabilities," *The Fourth International Workshop on Network & Communications Security*, Chennai, India, *Springer Lecture Notes in Electrical Engineering* (*LNEE*), vol. 131, pp. 621-629, December 22-24, 2012. [*Publication as part of the NSF CCLI/TUES Grant*]

[C53] **N. Meghanathan**, "Data Gathering Algorithms to Optimize Stability-Delay and Node-Network Lifetime for Wireless Mobile Sensor Networks," *Proceedings of the Fourth International Conference on Sensor Networks and Applications* (SNA-2012), pp. 237-242, New Orleans, LA, USA, November 14-16, 2012.

[C52] **N. Meghanathan**, "Virtualization of Virtual Memory Address Space," *ACM Proceedings of the Second International Conference on Computational Science, Engineering and Information Technology* (CCSEIT 2012), pp. 732-737, Coimbatore, India, October 26-28, 2012. DOI: 10.1145/2393216.2393338. ISBN: 978-1-4503-1310-0. Acceptance Rate: 23%.

[C51] F. C. Dancer[+], D. A. Dampier[+], J. M. Jackson[+] and **N. Meghanathan**, "A Theoretical Process Model for Smartphones," *Proceedings of the 2nd International Conference on Advances in Computing and Information Technology* (ACITY-2012), Delhi, India, *Springer Advances in Intelligent Systems and Computing*, vol. 3, pp. 279-290, July 2012.

[C50] **N. Meghanathan** and A. R. Geoghegan[*], "Testing for Software Security: A Case Study on Static Code Analysis of a File Reader Java Program," *Proceedings of the Springer LNICST 2nd International Conference on Computer Science, Engineering and Applications*, ICCSEA, Delhi, India, pp. 529-538, May 25-27, 2012. [*Publication as part of the NSF CCLI/TUES Grant*]

[C49] **N. Meghanathan** and M. Terrell[*], "Strong Neighborhood based Stable Connected Dominating Sets for Mobile Ad hoc Networks," *Proceedings of the 4th International Conference on Wireless, Mobile Network and Applications*, WiMoA, Delhi, India, pp. 415-424, May 25-27, 2012. [*Publication as part of the NSF REU Grant*]

[C48] **N. Meghanathan**, "A Unicast MANET Routing Protocol to Simultaneously Minimize the Stability-Hop Count Tradeoff and End-to-End Delay," *Proceedings of the 9th International Conference on Information Technology: New Generations*, ITNG, Las Vegas, NV, USA, April 16-18, 2012.

[C47] **N. Meghanathan**, H. Kim[+] and L. A. Moore[+], "Incorporation of Aspects of Systems Security and Software Security in Senior Capstone Projects," *Proceedings of the 9th International Conference on Information Technology: New Generations*, ITNG, Las Vegas, NV, USA, April 16-18, 2012. [*Publication as part of the NSF CCLI/TUES Grant*]

[C46] **N. Meghanathan** and B. Chituri[+], "A Secure Session Transfer Protocol for Downloading a Large File across a Cluster of Servers in the Presence of Network Congestion," *The 3rd International Conference on Networks and Communication Security*, Bangalore, India, *Springer-Verlag Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering Series*, LNICST 84, pp. 552-562, January 2012. [*Publication as part of the NSF CCLI/TUES Grant*]

[C45] **N. Meghanathan**, "A Link Distance Ratio based Stable Multicast Routing Protocol for Mobile Ad hoc Networks," *The 3rd International Conference on Wireless & Mobile Networks*, Bangalore, India,

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[C44] **N. Meghanathan**, "A Node Stability Index-based Connected Dominating Set Algorithm for Mobile Ad hoc Networks," *The 3rd International Conference on Networks and Communications*, Bangalore, India, *Springer-Verlag Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering Series*, LNICST 84, pp. 31-40, January 2012.

[C43] **N. Meghanathan**, "A MANET Multicast Routing Protocol for Stable Trees based on the Inverse of Link Expiration Times," *Proceedings of the 9th IEEE International Consumer Communications and Networking Conference*, Las Vegas, USA, pp. 947-951, January 2012.

[C42] **N. Meghanathan**, "Minimum Hop vs. Minimum Edge Based Multicast Routing for Mobile Ad hoc Networks," *The Third International Conference on Wireless, Mobile Networks and Applications*, Dubai, UAE, *Springer-Verlag Communications in Computer and Information Science Series*, CCIS 154, pp. 1-10, May 2011.

[C41] **N. Meghanathan** and L. A. Moore[+], "Experiences in Running a NSF-CISE REU Site at a HBCU," *Proceedings of The 2011 Annual Symposium on Computing at Minority Institutions (ADMI)*, Clemson, SC, USA, April 14-16, 2011. [*Publication as part of the NSF REU Grant*]

[C40] **N. Meghanathan**, "A Performance Comparison Study of Two Position-based Routing Protocols and their Improved Versions for Mobile Ad hoc Networks," *The First International Conference on Computer Science and Information Technology*, Bangalore, India, *Springer-Verlag Communications in Computer and Information Science Series*, CCIS 131, Part I, pp. 14-23, January 2011.

[C39] **N. Meghanathan**, "Optimum Routing Approach vs. Least Overhead Routing Approach for Minimum Hop Routing in Mobile Ad hoc Networks," *The First International Conference on Computer Science and Information Technology*, Bangalore, India, *Springer-Verlag Communications in Computer and Information Science Series*, CCIS 131, Part II, pp. 606-616, January 2011.

[C38] **N. Meghanathan**, "An Algorithm to Determine Minimum Velocity-based Stable Connected Dominating Sets for Ad hoc Networks," The *3rd International Conference on Contemporary Computing*, Noida, India, *Communications in Computer and Information Science Series*, CCIS 94, pp. 206-217, August 2010.

[C37] **N. Meghanathan** and S. R. Vavilala[^], "An Algorithm to Determine Multicast Meshes with Maximum Lifetime for Mobile Ad hoc Networks," The Second International Conference on Wireless and Mobile Networks (WiMoN-2010), Chennai, India, *Communications in Computer and Information Science Series*, CCIS 90, pp. 250-259, July 2010.

[C36] **N. Meghanathan,** "Design of a Reliability-based Source Routing Protocol for Wireless Mobile Ad hoc Networks," The First International Workshop on Trust Management in P2P Systems (IWTMP2PS), Chennai, India, *Communications in Computer and Information Science Series*, CCIS 89, pp. 463-472, July 2010.

[C35] **N. Meghanathan,** "On the Time between Successive Multi-Path Discoveries and Hop Count per Multi-Path for Zone-Disjoint Routing in Mobile Ad hoc Networks," The Second International Conference on Wireless and Mobile Networks (WiMo 2010), Ankara, Turkey, *Communications in Computer and Information Science Series*, CCIS 84, pp. 254-265, June 2010.

[C34] **N. Meghanathan,** N. Kostyuk[+], R. Isokpehi[+] and H. Cohly[+], "Clustering Model to Identify Biological Signatures for English Language Anxiety," *Proceedings of The Second Annual ORNL Biomedical Science and Engineering Conference (BSEC)*, Oakridge, TN, USA, May 2010.

[C33] **N. Meghanathan** and L. Nayak[^], "A Review of the Audio and Video Steganalysis Algorithms," *Proceedings of the 48th ACM Southeast Conference*, Oxford, MS, April 15 – 17, 2010.

[C32] **N. Meghanathan**, "Grid Block Energy based Data Gathering Algorithm for Lower Energy*Delay and Longer Lifetime in Wireless Sensor Networks," *Proceedings of the* 1st *International Conference on Sensor Networks and Applications* (SNA 2009), San Francisco, USA, November 4 – 6, 2009.

[C31] **N. Meghanathan**, D. Thomas* and E. S. Addison*, "Multicast Extensions to the Flow-Oriented Routing Protocol and Node Velocity-based Stable Path Routing Protocol for Mobile Ad hoc Networks," *Proceedings of the* 1st *IEEE Workshop on Mobile Computing and Networking Technologies*, St. Petersburg, Russia, October 12-14, 2009.

[C30] **N. Meghanathan**, "A Node-Disjoint Multi-path Extension of the Location Prediction Based Routing Protocol for Mobile Ad hoc Networks," *Proceedings of the International Conference on Signal Processing and Communication Systems,* Omaha, Nebraska, USA, September 28-30, 2009.

[C29] **N. Meghanathan**, "Multicast Extensions to the Location-Prediction Based Routing Protocol for Mobile Ad hoc Networks," *International Conference on Wireless Algorithms, Systems and Applications*, Boston, USA, August 16-18, 2009, published in the *Springer Verlag Lecture Notes of Computer Science Series*, LNCS 5682, B. Liu et al. (Eds.), pp. 190-199, 2009.

[C28] **N. Meghanathan**, "On the Connectivity, Lifetime and Hop Count of Routes Determined using the City Section and Manhattan Mobility Models for Vehicular Ad hoc Networks," *International Conference on Contemporary Computing*, Noida, India, August 17-19, 2009, *Springer Verlag Communications in Computer and Information Science Series*, CCIS 40, pp. 170-181, 2009. Acceptance Rate: 31%

[C27] **N. Meghanathan** and M. Sugumar^, "A Beaconless Minimum Interference Based Routing Protocol for Mobile Ad hoc Networks," *International Conference on Contemporary Computing*, Noida, India, August 17-19, 2009, published in the *Springer Verlag Communications in Computer and Information Science Series*, CCIS 40, pp. 58-69, 2009. Acceptance Rate: 31%

[C26] **N. Meghanathan,** "A Density and Mobility Aware Energy-Efficient Broadcast Strategy to Minimize the Number of Route Discoveries in Mobile Ad hoc Networks," *Proceedings of the 2009 International Conference on Wireless Networks, ICWN 09, Las Vegas,* pp. 167 – 173, July 13-16, 2009, Acceptance Rate = 25%, ECI: 0.87

[C25] **N. Meghanathan,** "An Algorithm to Determine Energy-aware Connected Dominating Set and Data Gathering Tree for Wireless Sensor Networks," *Proceedings of the 2009 International Conference on Wireless Networks, ICWN 09, Las Vegas,* July 13-16, 2009, Acceptance Rate = 25%, ECI: 0.87

[C24] **N. Meghanathan** and G. W. Skelton+, "An Energy Efficient Risk Notification Message Dissemination Protocol for Vehicular Ad hoc Networks," *Proceedings of the International Conference on High Performance Computing, Networking and Communications Systems*, HPCNCS-09, Orlando, July 13-16, 2009.

[C23] **N. Meghanathan**, "A Beaconless Node Velocity-based Stable Path Routing Protocol for Mobile Ad hoc Networks," *Proceedings of the IEEE Sarnoff Symposium Conference*, pp. 9-13, Princeton, NJ, March 30-April 1, 2009.

[C22] **N. Meghanathan**, "Impact of Range of Simulation Time and Network Shape on the Hop Count and Stability of Routes for Mobile Ad hoc Networks," *Proceedings of the 47th ACM Southeast Conference*, Clemson, March 19-21, 2009.

[C21] **N. Meghanathan** and L. C. Milton^, "A Simulation-Based Performance Comparison Study of Stability-Based Routing, Power-Aware Routing and Load-Balancing Routing Protocols for Mobile Ad hoc Networks," *Proceedings of the 6th International Conference on Wireless On-demand Network Systems and Services*, Snowbird, Utah, Feb 2 – 4, 2009.

[C20] **N. Meghanathan**, "Location Prediction Based Routing Protocol for Mobile Ad hoc Networks," *Proceedings of the IEEE Global Communications (GLOBECOM) Conference*, pp. 569-573, New Orleans, Nov-Dec 2008.

[C19] **N. Meghanathan**, "Stability and Link Efficiency of On-Demand Source Tree-Based Routing Protocols for Mobile Ad Hoc Networks," *Proceedings of the International Conference on High Performance Computing, Networking and Communication Systems*, pp. 159-166, July 2008.

[C18] **N. Meghanathan** and G. W. Skelton[+], "A Two Layer Architecture of Mobile Sinks and Static Sensors," *Proceedings of the 15th International Conference on Advanced Computing and Communication*, pp. 249-254, December 2007

[C17] **N. Meghanathan**, "Stability and Hop Count of Node-Disjoint and Link-Disjoint Multi-Path Routes in Ad Hoc Networks," *Proceedings of the 3rd IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob), New York,* October 2007 (acceptance rate: 44%).

[C16] **N. Meghanathan**, "Impact of Broadcast Route Discovery Strategies on the Performance of Mobile Ad Hoc Network Routing Protocols," *Proceedings of the International Conference on High Performance Computing, Networking and Communication Systems*, pp. 144 – 151, July 2007 (acceptance rate: 30%).

[C15] S. Knight[^], H. Kim[+], **N. Meghanathan** and C. Bland[+], "Fast Determination of Ancestor-Descendant Relationships using Bit Patterns," *Proceedings of the International Conference on Knowledge and Engineering*, June 2007 (acceptance rate: 22%).

[C14] **N. Meghanathan**, "Stability-Energy Consumption Tradeoff among Mobile Ad Hoc Network Routing Protocols," *Proceedings of the 3rd IARIA International Conference on Wireless and Mobile Communications*, March 2007 (acceptance rate: 31%), extended version invited for publication in the *Journal of Networks*.

[C13] **N. Meghanathan**, "A Simulation Study on the Stability-Oriented Routing Protocols for Mobile Ad Hoc Networks," *Proceedings of the 3rd IEEE and IFIP International Conference on Wireless and Optical Communication Networks*, April 2006.

[C12] **N. Meghanathan**, "Comparison of Stable Path Selection Strategies for Mobile Ad Hoc Networks," *Proceedings of the 5th IFIP International Conference on Networking*, April 2006 (acceptance rate: 39%).

[C11] **N. Meghanathan**, "On-demand Maximum Battery Lifetime Routing with Power Sensitive Power Control," *Proceedings of the 5th IFIP International Conference on Networking*, April 2006 (acceptance rate: 39%).

[C10] **N. Meghanathan**, "Determining a Sequence of Stable Multicast Steiner Trees in Mobile Ad Hoc Networks," *Proceedings of the 44th ACM-Southeast* Conference, pp. 102-106, March 2006.

[C9] **N. Meghanathan**, "An Algorithm to Determine the Sequence of Stable Connected Dominating Sets in Mobile Ad Hoc Networks," *Proceedings of the 2nd Advanced International Conference on Telecommunications*, February 2006 (acceptance rate: 37%).

[C8] **N. Meghanathan** and A. Farago[+], "Comparison of Routing Strategies for Minimizing Energy Consumption in Mobile Ad Hoc Networks," *Proceedings of the 4th Asian International Mobile Computing Conference*, January 2006.

[C7] **N. Meghanathan** and A. Farago[+], "An Efficient Algorithm for the Optimal Number of Route Transitions in Mobile Ad Hoc Networks," *Proceedings of 1st IEEE – International Conference on Wireless and Mobile Computing, Networking and Communications*, August 2005.

[C6] **N. Meghanathan** and A. Farago[+], "On the Route Refresh Frequency for On-demand Maximum Battery Life Routing in Ad Hoc Networks," *Proceedings of 1st IEEE – International Conference on Wireless and Mobile Computing, Networking and Communications*, August 2005.

[C5] **N. Meghanathan** and A. Farago[+], "Maximizing Network Lifetime under Fixed Energy Budget in Ad Hoc Networks," *Proceedings of 6th IEEE– Southeast Conference*, pp. 319 – 326, Fort Lauderdale, FL, USA, April 8 – 10, 2005.

[C4] **N. Meghanathan** and A. Farago[+], "Power Sensitive Power Control in Ad Hoc Networks," *Proceedings of 43rd ACM- Southeast Conference*, March 2005.

[C3] **N. Meghanathan** and A. Farago[+], "Looking at Protocol Efficiency from a New Angle: Stability – Delay Analysis," *Proceedings of 2nd ACM International Workshop on Mobility Management and Wireless Access* (MobiWAC), in conjunction with Mobicom '04, October 2004.

[C2] S. Baskiyar[+] and **N. Meghanathan**, "Scheduling and Load Sharing in Mobile Computing Environments using Tickets," *Proceedings of 39th ACM- Southeast Conference*, March 2001.

[C1] **N. Meghanathan**, V. M. Saucedo[+] and G. A. Krishnagopalan[+], "Modeling of Kraft Pulping Process Based on On-line Data from Near Infrared Analyzer," *AIChE Symposium Series* 324, vol. 96, Fundamentals & Numerical Modeling of Unit Operations in Forest Products Industries, pp. 36-41, 2001.

PROFESSIONAL SERVICE SCHOLARLY ACTIVITIES

PROGRAM EVALUATOR

- ABET CAC Program Evaluator, since June 2012.

EDITOR-IN-CHIEF

CURRENT

- Journal on Applications of Graph Theory in Wireless Ad hoc Networks and Sensor Networks (GRAPH-HOC), Publisher: Academy and Industry Research Collaboration Center (AIRCC)
- International Journal of Computer Networks and Communications (IJCNC), Publisher: Academy and Industry Research Collaboration Center (AIRCC)
- Machine Learning and Applications: An International Journal (MLAIJ), Publisher: Academy and Industry Research Collaboration Center (AIRCC)

JOURNAL EDITORIAL BOARD MEMBER

- International Journal of Convergence Computing (IJConvC), Publisher: Inderscience Publications. ISSN: 2048-9129
- International Journal of Communication Networks and Distributed Systems (IJCNDS), Publisher: Inderscience Publications. ISSN: 1754-3916
- International Journal of Network Science, .ISSN: 2048-2183
- International Journal on Advances in Telecommunications, ISSN: 1942-2601
- International Journal of Network Security and its Applications, ISSN: 0975-2307

WORKSHOP ORGANIZATION CHAIR

[1] International Workshop on Applications of Graph Theory in Wireless Ad hoc Networks and Sensor Networks (2010-Present)

[2] International Workshop on Secure Software Development, as part of the 8th International Conference on Software Security and Reliability (SERE 2014), San Francisco, June 30-July 2, 2014.

[3] Software Security Track, as part of the International Conference on Information Technology: New Generations (ITNG), Las Vegas, NV, USA (2013-2014)

INVITED TALK

- Louisiana Tech University: Network Science-based Research Approaches to Analyze Complex Datasets, August 2022.
- 9th International Conference of Advanced Computer Science & Information Technology, July 10~11, 2021, Toronto, Canada.

- 8th International Conference on Mobile & Wireless Networks, May 25-26, 2019, Vancouver, Canada.
- 4th International Conference on Control, Modeling and Computing, July 14-15, 2018, Chennai, India.
- University of Mississippi: Guest Lecture on *Maximum Bottleneck Node Weight and Link Weight-based Data Gathering Trees for Wireless Sensor Networks*, March 25, 2015.
- International Conference on Advances in Control and Computing of Analog and Digital Systems (ACCADS-2014), Coimbatore, India: Guest Lecture on *Stability-based Data Gathering Trees for Mobile Sensor Networks*, Dec 29-31, 2014.
- 6th International Conference on Networks & Communications (NETCOM-2014), Chennai, India: Guest Lecture on *Centrality Metrics for Complex Network Analysis*, Dec. 27-28, 2014.
- 4th International Conference on Computer Science, Engineering and Applications (ICCSEA 2014), Chennai, India: Guest Lecture on *Use of Graph Theory Algorithms to Determine Stable Paths in Wireless Mobile Ad hoc Networks*, July 26, 2014.
- Dhanalakshmi College of Engineering, Chennai, India: Guest Lecture on *Mobile Ad hoc Networks and Sensor Networks*, March 10, 2014.
- 3rd International Conference on Advances in Computing and Information Technology (ACITY), Chennai, India: Guest Lecture on *A Generic Algorithm to Determine Connected Dominating Sets for Mobile Ad hoc Networks and Performance Evaluation under Different Mobility Models*, July 27, 2013.
- Colloquium at Columbus State University, GA: Guest lecture on *Integration of Wireless Mobile Ad hoc Networks Research into the Classroom and Promotion of Undergraduate Research*, April 30, 2013.
- Research Colloquium organized by the Department of Computer Science, The University of Texas at Dallas, Guest Lecture on "Incorporating Aspects of Systems and Software Security in Software Engineering Projects", October 5, 2012.

ACADEMIC SERVICE

GRADUATE ADVISOR FOR PhD DISSERTATIONS

1. Yu Wu, "Data Analytics of Crime Data of US Cities," PhD in Computational and Data-enabled Science and Engineering, Jackson State University, Fall 2021 - Present.
2. Ashley Abraham, "Worldwide Surface Soil Similarity Search," PhD in Computational and Data-enabled Science and Engineering, Jackson State University, Fall 2022 - Fall 2024.
3. Md Rahman, "Applications of Centrality Metrics for Complex Network Analysis", PhD in Computational and Data-enabled Science and Engineering, Jackson State University, Summer 2017 - Spring 2020.
4. Mahzabin Akhter, "Spectral Analysis of Node Associations in Complex Networks", PhD in Computational and Data-enabled Science and Engineering, Jackson State University, Summer 2017 - Spring 2020.

GRADUATE ADVISOR FOR MS THESIS AND PROJECTS

1. Tony Olaye, (Project) "Stability and Energy Consumption of Multi-path Routing Strategies", Department of Computer Science, Jackson State University, August 2006 – May 2007
2. Mouna Kettani, (Project) "Impact of Broadcasting Strategies on Mobile Ad Hoc Network Routing Strategies", Department of Computer Science, Jackson State University, August 2006 – May 2007
3. Michael Williams, (Thesis) "A Credible Secure Source Routing Protocol for Mobile Ad Hoc Networks," Department of Computer Engineering, Jackson State University, Jan. 2006 – Dec. 2006
4. Omar Kebbeh, (Thesis) "Exploring the Impact of Mobile Ad Hoc Network Routing Protocols on Network Lifetime", Department of Computer Science, Jackson State University, May 2006 – Aug. 2007

5. Alphonce Omulo, (Project) “Impact of Random Waypoint Simulation Time Period and Network Shape on the Performance of Routing Algorithms for Mobile Ad Hoc Networks,” Department of Computer Science, Jackson State University, May 2006 – August 2007
6. Sugam Sharma, (Thesis) “Sink Mobility Models for Sensor Networks,” Department of Computer Science, Jackson State University, May 2007 – May 2008
7. Kasi Mudunuri, (Thesis) “Simulation Study of the Bandwidth Efficient Multicast Routing Protocol for Mobile Ad Hoc Networks,” Department of Computer Science, Jackson State University, May 2007 – December 2007
8. Sumanth Allam, (Project) “Tools and Techniques for Computer and Network Forensics,” Department of Computer Science, Jackson State University, May 2007 – May 2008
9. Sumalatha Allam, (Project) “Automated Web-based Faculty Performance Evaluation,” Department of Computer Science, Jackson State University, January 2008 – December 2008
10. Leslie Milton, (Thesis) “Performance Comparison of Stable Path, Load Balancing and Power-Aware Routing Protocols for Mobile Ad Hoc Networks,” Department of Computer Science, Jackson State University, May 2007 – December 2008
11. Srilakshmi Vavilala, (Thesis) “Impact of Route Selection Metrics on the Performance of On-Demand Mesh-based Multicast Ad hoc Routing Protocols,” Department of Computer Science, Jackson State University, August 2007 – December 2008
12. Ayomide Odunsi, (Thesis) “Scenario based Performance Evaluation of the Fish Eye State Routing Protocol,” Department of Computer Science, Jackson State University, August 2007 – December 2008
13. Levon P. Judon, (Thesis) “Performance Study of Ad hoc Routing Protocols in the Presence of On-demand Recharging,” Department of Computer Science, Jackson State University, Aug. 2007-July 2009
14. Meena Sugumar, (Thesis) “Minimum Interference based Routing Protocol for Mobile Ad hoc Networks,” Department of Computer Science, Jackson State University, January 2008 – May 2009
15. Sireesha Gorla, (Project) “On the Probability of k-Connectivity in Ad hoc Networks under Different Mobility Models,” Department of Computer Science, Jackson State University, Aug. 2008 – May 2010
16. Busola Olagbegi, (Project) “A Review of the Energy Efficient and Secure Multicast Routing Protocols for Mobile Ad hoc Networks,” Dept. Computer Science, Jackson State University, May 2009-May 2010
17. Lopamudra Nayak (Thesis) "Design and Development of a Software Application for Automated Transcript Analysis and Course Enrollment," Department of Computer Science, Jackson State University, January 2010 – August 2011
18. DeShante Johnson (Project) "An Analysis of Software Security Attacks and Mitigation Controls," Department of Computer Science, Jackson State University, August 2011 – May 2012
19. Ilin S. Dasari (Thesis) "Performance Comparison Study of Connected Dominating Set Algorithms for Mobile Ad hoc Networks under Different Mobility Models," Department of Computer Science, Jackson State University, July 2011 - December 2012
20. Sandeep R. Thumma (Project) "An Automated Real Time Secure Application to Manage the Release of Pollutants in an Automobile Manufacturing Plant," Department of Computer Science, Jackson State University, January 2012 - December 2012
21. Ishtiaq Ali (Thesis) "A Simulation Study of the Distributed Data Gathering Algorithms for Mobile Sensor Networks," Department of Computer Science, Jackson State University, Jan. 2011 - Dec. 2013
22. Michael Terrell, (Thesis), "Session Mobility as a Service for Cloud Computing Environment: Design and Implementation," Department of Computer Science, Jackson State University, Jan. 2012-May 2014
23. Lawrence McClendon (Project), “Using Machine Learning Algorithms to Analyze Crime Data,” Department of Computer Science, Jackson State University, August 2014-May 2015
24. Yuxiao (Mina) Zhou (Thesis), "Distributed Processing of Large Remote Sensing Images using Map Reduce," Department of Computer Science, Jackson State University, January 2014 – December 2015
25. Fei Yang (Project), "Correlation Analysis between Computationally-Heavy Edge Betweenness Centrality and Computationally-Light Neighborhood Overlap," Department of Computer Science, Jackson State University, August 2016 - April 2017

Department, College and University committees Membership

- Department/College Tenure and Promotion Committees, 2021- Present
- Department Search Committee, 2022 - Present
- Member of Undergraduate and Graduate Curriculum Committees, Fall 2014 - Present
- Graduate Program Coordinator for the Department of Computer Science, Spring 2014 - Fall 2016
- Assessment Coordinator for the Department of Computer Science, 2006 - 2011, 2017-2018
- University Graduate Council, Fall 2011 – Summer 2014
- CSET Sabbatical Committee, Fall 2010 – Summer 2017
- Cyber Security Team to prepare for National Security Agency Certification and Center for Excellence in Information Assurance, Fall 2009 - Fall 2011
- Computer Science Representative for CSET Research Advisory Council, Fall 2009 – Summer 2012

Citation Record

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FOLLOW

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Verified email at jsums.edu - Homepage

Wireless Ad hoc Networks Sensor Networks Network Science and Grap… Cyber Security
Machine Learning

TITLE	CITED BY	YEAR
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