

Madhuri Siddula

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Research Interests

- Privacy and Security
- Internet of Things
- Social Networks
- Location-based services
- Big Data
- Wireless Networks

Education

August 2020 **Georgia State University**, Atlanta, GA

Ph.D. in Computer Science

Dissertation: “Privacy-preserving user data publication in social networks”

Advisor: Dr. Yingshu Li and Dr. Zhipeng Cai

GPA: 3.86/4.0

June 2012 **Indraprastha Institute of Information Technology Delhi**, New Delhi, India

M.Tech. in Computer Science with specialization in information security

Thesis: “Cryptanalysis of digital watermarking using SVM”

Advisor: Dr. Somitra Sanadhya

GPA: 7.9/10.0

June 2010 **Osmania University**, Hyderabad, India

B.Tech. in Computer Science

Project: “DIgital imaging and COMMunication (DICOM) in medical industry”

GPA: 82/100

Madhuri Siddula

Appointments

Assistant Professor **North Carolina A&T State University**, Greensboro, NC 2020-Present

Graduate Research Assistant **Georgia State University**, Greensboro, NC 2020-Present

Awards

- NSF EiR award (**Award #:** 2200673)
- Ford Summer Sabbatical Scholarship for SUMMER 2021
- People's Choice Award for Doctoral 3-Minute Thesis at Georgia State University
- Best Graduate Teaching Assistant at IIITD, New Delhi

Teaching Experience

Professor	Computer Programming (SPRING 2021 - present).	NC A&T, Greensboro
	Introduction to cyber security (SPRING 2022)	NC A&T, Greensboro
	Advanced Operating Systems (FALL 2021)	NC A&T, Greensboro
Instructor	Web Programming (SPRING 2018 and SPRING 2019)	GSU, Atlanta
	CS101 (FALL 2014 – FALL 2015)	WVU, Morgantown
Teaching Assistant	Sensor Networks and IoT (FALL 2019)	GSU, Atlanta
	Automata (FALL 2018)	GSU, Atlanta
	Data Mining (FALL 2017)	GSU, Atlanta
Lab Instructor	Principles of computer science I & II	GSU, Atlanta
	Systems Management	IIITD, New Delhi
	Digital Communications	IIITD, New Delhi

Research Experience

Research Project Associate IIT Hyderabad, India

- Worked on a project funded by the Government of India and KDDI Labs, Japan
- Developed a novel dynamic link aggregation scheme in LTE systems
- Worked along with other researchers from the department

Research Assistant WVU, Morgantown

- Worked for a project funded by NASA (WV EPSCoR research grant)
- Developed automatic detection of various objects from cluttered images

Madhuri Siddula

- Aim is to utilize deep learning and image processing tools for construction site images.

Professional Activities

- Guest Editor in Hindwai Wireless Communications and Mobile Computing Journal special Edition “Secure Computational Solutions for Sparse Data Challenges in the Internet of Things”.
- Guest Editor in Elsevier Special Issue on Architectures, Algorithms, and Applications for High-Confidence IoT.
- Guest Editor in IEEE IoT Journal Special Issue on “When Blockchain Meets 5/6G – Enabling Endogenously Secure IoT”.
- Reviewer for research journals and conferences.
 - Wiley Transactions On Emerging Telecommunications Technologies
 - Wireless Communications and Mobile Computing
 - IEEE Transactions On Signal and Information Processing over Networks
 - IEEE Transactions on Computational Social Systems
 - IEEE International Conference on Wireless Algorithms, Systems and Applications
 - ACM Transactions on Sensor Networks
 - IEEE Transactions on Network Science and Engineering
- Board Member (Treasurer) for the IEEE GSU student chapter.

Publications

Published Journals / Conferences:

1. **[Discover Internet of Things]** Mowri, R. A., **Siddula, M.**, & Roy, K. (2023). Is iterative feature selection technique efficient enough? A comparative performance analysis of RFECV feature selection technique in ransomware classification using SHAP. *Discover Internet of Things*, 3(1), 21.
2. **[Future Internet]** Schnell, K., Roy, K., & **Siddula, M.** (2023). A Descriptive Study of Webpage Designs for Posting Privacy Policies for Different-Sized US Hospitals to Create an Assessment Framework. *Future Internet*, 15(3), 112.
3. **[High Confidence Computing]** Chen, Y., Chen, H., Zhang, Y., Han, **M.**, **Siddula, M.**, & Cai, Z. (2022). “A survey on blockchain systems: Attacks, defenses, and privacy preservation.” *High-Confidence Computing*, 2(2), 100048.
4. **[Smart World]** J. Yang, Y. Huang, **M. Siddula** and Z. Cai, (2021) "Noise Generation GAN Based Identity Privacy Protection for Smart City," 2021 IEEE SmartWorld, Ubiquitous Intelligence & Computing, Advanced & Trusted Computing, Scalable Computing & Communications, Internet of People and Smart City Innovation (SmartWorld/SCALCOM/UIC/ATC/IOP/SCI), 2021, pp. 338-347, doi: 10.1109/SWC50871.2021.00053.

Madhuri Siddula

5. **[Smart World]** V. Malladi, Y. J. Li, **M. Siddula**, D. Seoand and Y. Huang, (2021) "Decentralized Aggregation Design and Study of Federated Learning," 2021 IEEE SmartWorld, Ubiquitous Intelligence & Computing, Advanced & Trusted Computing, Scalable Computing & Communications, Internet of People and Smart City Innovation (SmartWorld/SCALCOM/UIC/ATC/IOP/SCI), 2021, pp. 328-337, doi: 10.1109/SWC50871.2021.00052.
6. **[IoT]** C. Chi, Y., Wang, X., Tong, **M. Siddula** and Z. Cai, (2021) "Game Theory in Internet of Things: A Survey," in IEEE Internet of Things Journal, doi: 10.1109/JIOT.2021.3133669.
7. **[Sensors]** Liu, Z., Thapa, N., Shaver, A., Roy, K., **Siddula, M.**, Yuan, X., Yu, A. (2021) "Using Embedded Feature Selection and CNN for Classification on CCD-INID-V1—A New IoT Dataset." In Sensors 2021, 21, 4834. <https://doi.org/10.3390/s21144834>
8. **[WCMC]** **M. Siddula**, Y. Li, X. Cheng, Z. Tian, and Z. Cai. (2020) "Privacy-enhancing Preferential LBS query for mobile social network users," in Wireless Communications and Mobile Computing, Sept. 2020.
9. **[TCSS]** **M. Siddula**, Y. Li, X. Cheng, Z. Tian, and Z. Cai. (2019) "Anonymization in Online Social Networks Based on Enhanced Equi-Cardinal Clustering," in IEEE Transactions on Computational Social Systems, vol. 6, no. 4, pp. 809-820, Aug. 2019. doi: 10.1109/TCSS.2019.2928324.
10. **[Tsinghua]** L. Ji, **M. Siddula**, X. Cheng, W. Cheng, Z. Tian, and Y. Li. (2019) "Approximate data aggregation in sensor equipped IoT networks." Tsinghua Science and Technology 25, no. 1, pp. 44-55.
11. **[IPCCC]** **M. Siddula**, Z. Cai, and D. Miao. (2018) "Privacy Preserving Online Social Networks using Enhanced Equicardinal Clustering," IEEE 37th International Performance Computing and Communications Conference, Orlando, FL, USA, 2018, pp. 1-8. doi: 10.1109/PCCC.2018.8710844.
12. **[ACCESS]** **M. Siddula**, L. Li, and Y. Li. (2018) "An Empirical Study on the Privacy Preservation of Online Social Networks," in IEEE ACCESS, vol. 6, pp. 19912-19922. doi: 10.1109/ACCESS.2018.2822693.
13. **[WASA]** L. Ji, **M. Siddula**, X. Cheng, W. Cheng, Z. Tian, and Y. Li. (2018) "Sampling Based δ -Approximate Data Aggregation in Sensor Equipped IoT Networks." In International Conference on Wireless Algorithms, Systems, and Applications, pp. 249-260. Springer, Cham.
14. **[SCN]** G. Li, Z. Cai, G. Yin, Z. He, and **M. Siddula**. (2018) "Differentially Private Recommendation System Based on Community Detection in Social Network Applications," Security and Communication Networks, vol. 2018, Article ID 3530123, 18 pages,. <https://doi.org/10.1155/2018/3530123>.
15. **[CIB]** **M. Siddula**, F. Dai, Y. Ye, and J. Fan. (2016) "Classifying construction site photos for roof detection: A machine-learning method towards automated measurement of safety performance on roof sites", Construction Innovation, Vol. 16 Issue: 3, pp.368-389.
16. **[ICSDEC]** **M. Siddula**, F. Dai, Y. Ye, and J. Fan. (2016) "Unsupervised Feature Learning for Objects of Interest Detection in Cluttered Construction Roof Site Images," Procedia Engineering, Volume 145, 2016, Pages 428-435, ISSN 1877-7058.

Madhuri Siddula

17. [ICCCBE] **M. Siddula**, F. Dai, Y. Ye, and J. Fan. (2016) “Learning in Unordered and Static Daily Construction Site Photos for Roof Detection: A Step toward Automated Safety Performance Monitoring for Work on Rooftops,” 16th International Conference on Computing in Civil and Building Engineering, Osaka, Japan, pp. 1661-1668.
18. [CONNECT] B.M.K. Komanduri, **M. Siddula**, S. Vanlin, and B. R. Tamma. (2014) “A Dynamic Link aggregation Scheme for heterogeneous wireless networks,” IEEE International Conference on Electronics, Computing and Communication Technologies, Bangalore, India, pp. 1-6. doi: 10.1109/CONECCT.2014.6740326.
19. [SMC] **M. Siddula**, S. Sanadhya, and A. V. Subramanyam. (2013) “Cryptanalysis of a Digital Watermarking Scheme Based on Support Vector Regression,” IEEE International Conference on Systems, Man, and Cybernetics, Manchester, pp. 1554-1559. doi: 10.1109/SMC.2013.268.

Affiliations

- IEEE Student Member
- ACM
- N2Women
- Precog@IIITD (2010-2012)
- CPS (Cyber Physical Systems) Group at IIT Hyderabad (2012-2013)

Presentations

- “Privacy Preserving Online Social Networks using Enhanced Equicardinal Clustering” IPCCC, Orlando, FL, 17 November 2018.
- “Privacy in Social Networks” CS Poster Day, GSU, Atlanta, GA, 22 June 2018 and 26 April 2019.
- “A dynamic link aggregation scheme for heterogeneous networks”, IEEE CONNECT, Bangalore, India, 6 January 2014.
- “Data Security – Problems and Solutions”, NIIT, Neemrana, India, 2011.