

## **CURRICULUM VITAE**

- Name and full correspondence address:** Dr. R. Madhusudhan  
Professor  
Dept. of M. A. C. S.,  
N. I. T. K., Surathkal,  
Karnataka State, India - 575025
- Email(s) and contact number(s) :** madhu@nitk.edu.in 8197623723
- Academic Qualification (Undergraduate Onwards)**

Sl.No	Degree	University/Institution
1.	B.E (Computer Science & Engineering)	NIE, University of Mysore
2.	M.Tech (Computer Science & Engineering)	NITK, Surathkal
3.	Ph.D	IIT Roorkee

- Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award.**

**Ph.D Thesis Title:** IMPROVEMENT OF SOME REMOTE USER AUTHENTICATION PROTOCOLS

**Guide's Name:** Prof. R. C. Mittal, Dept.of Mathematics

**Institute/Organization/University:** IIT Roorkee

**Year of Award.:** 2014

- Work experience (in chronological order).**

Sl.No.	Designation	Name of the Institute	From	To
1	Professor	N.I.T.K., Surathkal	9/10/2023	Till Date
2	Associate Professor	N.I.T.K., Surathkal	7/10/2010	8/10/2023
3	Assistant Professor	N.I.T.K., Surathkal	7/10/2007	6/10/2010
4	Sr. Lecturer	N.I.T.K., Surathkal	7/10//2002	6/10/2007
5	Lecturer	K.R.E.C., Surathkal	7/10/1996	6/10/2002
6	Assistant Lecturer	K.R.E.C., Surathkal	10/9/1995	09/07/1996
7	Visiting Faculty	SJCE Mysore	1993	1995

**6. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.**

S.No	Name of Award	Awarding Agency	Year
1	QIP Fellowship	MHRD	2009-2012

**7. Publications (*List of papers published in International Journals, in year wise descending order*).**

1. Madhusudhan, R, and KS, Suvidha. "Robust and secure authentication protocol protecting privacy for roaming mobile user in global mobility networks". International Journal of Grid and Utility Computing 12, no.1 (2021): 94–111.

2. Madhusudhan, R, and Chaitanya S, Nayak. "An improved user authentication scheme for electronic medical record systems". Multimedia Tools and Applications 79, no.29 (2020): 22007–22026.

3. Madhusudhan, R, and KS, Suvidha. "A secure lightweight two-factor authentication scheme in global mobility networks". International Journal of Space-Based and Situated Computing 9, no.2 (2019): 109–123.

4. Madhusudhan, R, and R, Shashidhara. "A secure anonymous authentication protocol for roaming service in resource-constrained mobility environments". Arabian Journal for Science and Engineering 45, no.4 (2020): 2993–3014.

5. Madhusudhan, R, and R, Shashidhara. "A novel DNA based password authentication system for global roaming in resource-limited mobile environments". Multimedia Tools and Applications 79, no.3 (2020): 2185–2212.

6. Madhusudhan, R, and R, Shashidhara. "Mobile user authentication protocol with privacy preserving for roaming service in GLOMONET". Peer-to-Peer Networking and Applications 13, no.1 (2020): 82–103.

7. Madhusudhan, R, and Chaitanya S, Nayak. "An Assessment of Website User Authentication Mechanisms". International Journal of Computing & Information Sciences 14, no.3 (2018): 14.

8. Madhusudhan, R, and Chaitanya S, Nayak. "A robust authentication scheme for telecare medical information systems". Multimedia Tools and Applications 78, no.11 (2019): 15255–15273.

9. Madhusudhan, R, Manjunath, Hegde, and Imran, Memon. "A secure and enhanced elliptic curve cryptography-based dynamic authentication scheme using smart card".International Journal of Communication Systems 31, no.11 (2018): e3701.
10. Madhusudhan, R, and R, Shashidhara. "A secure and lightweight authentication scheme for roaming service in global mobile networks". Journal of information security and applications 38 (2018): 96–110.
11. Madhusudhan, R, and Manjunath, Hegde. "Security bound enhancement of remote user authentication using smart card".Journal of information security and applications 36 (2017): 59–68.
12. Madhusudhan, R, and RC, Mittal. "An enhanced biometrics-based remote user authentication scheme using mobile devices".International Journal of Computational Intelligence Studies 1, no.4 (2012): 333–348.
13. Madhusudhan, R, and Adireddi, Praveen. "Weaknesses of a dynamic ID based remote user authentication protocol for multi-server environment".Journal of Computer and Communications 2, no.04 (2014): 196.
14. Madhusudhan, R, and RC, Mittal. "Dynamic ID-based remote user password authentication schemes using smart cards: A review". Journal of Network and Computer Applications 35, no.4 (2012): 1235–1248.

#### **8. Publications (*List of papers published in Conferences in ascending order*).**

1. Madhusudhan, R. and R. C. Mittal, Security Weaknesses and Improvement of Dynamic ID based Remote User Authentication Protocol, in IEEE Proceedings of International Conference on Computer Applications and Network Security (ICCANS-2011). 2011: Maldives. May 27-29 p. 231-235.
2. Madhusudhan, R. and R. C. Mittal, Security Weaknesses and Improvement of Dynamic ID based Remote User Authentication Protocol, in Proceedings of International Conference on Advances in Modeling, Optimization and Computing (AMOC-2011). Roorkee. December 5-7, 2011, p. 1641-1650.
3. Madhusudhan, R. and R. C. Mittal, Security Weaknesses and Improvement of Dynamic ID based Remote User Authentication Protocol, in Proceedings of International Conference on Frontiers of Computer Science (ICFoCS 2011), IISc, Bangalore, August 7-9, 2011.

4. Madhusudhan, R. and R. C. Mittal, "An Efficient Fingerprint-Based Remote User Authentication Protocol Using Mobile Devices", Proceedings of the International Conference on Soft Computing for Problem Solving (SocProS 2011) December 20-22, 2011, Springer Berlin / Heidelberg. p. 569-578.
5. R. Madhusudhan and Rohith Kumar S, "Cryptanalysis of a Remote User Authentication Protocol Using Smart Cards", in IEEE Proceedings of 2014 IEEE 8<sup>th</sup> International Symposium on Service Oriented System Engineering( SOSE-2014), 2014, Oxford, U.K, April 7-10, p.474-477
6. R. Madhusudhan and A. Praveen, "Weaknesses of a Dynamic ID Based Remote User Authentication Protocol for Multi-Server Environment." in Proceedings of Conference on Information Security (CIS 2014), Suzhou, China, March 10-12.
7. R. Madhusudhan and Annapurna Valiveti, "Cryptanalysis of Remote User Authentication Scheme with key agreement", 2015 International Conference on Computer, Communications, and Control Technology (I4CT), Kuching, Sarawak, Malaysia, 21 Apr - 23 Apr 2015.
8. Madhusudhan, R., and Manjunath Hegde. "Cryptanalysis and Improvement of Remote User Authentication Scheme Using Smart Card." 2016 International Conference on Computer and Communication Engineering (ICCCE), pp. 84-89, IEEE, 2016.
9. R. Madhusudhan and Chaitanya S. Nayak, "An Assessment of Website User Authentication Mechanisms", Proceedings of the International Conference On Computing And Information Sciences, September 14-15, 2016, Dubai – United Arab Emirates
10. Madhusudhan R. and Shashidhara, "An Efficient and Secure Authentication Scheme With User Anonymity for Roaming Service in Global Mobile Networks." , In Proceedings of the 6th International Conference on Communication and Network Security, Nov 26, 2016. pp. 119-126. ACM
11. Madhusudhan, R. and Suvidha, K. S., "An Efficient and Secure User Authentication Scheme with Anonymity in Global Mobility Networks." In Proceedings of the 31<sup>st</sup> International Conference on Advanced Information Networking and Applications Workshops (WAINA), 2017, pp. 19-24, IEEE.
12. Madhusudhan, R. and Suvidha, K. S., "An enhanced secure authentication scheme with user anonymity in mobile cloud computing." In Proceedings of the PKIA 2017, Bangalore: 17-22

13. R. Madhusudhan and Shashidhara: Mitigation of Cross-Site Scripting Attacks in Mobile Cloud Environments. This paper has been accepted for presentation and publication at Sixth International Symposium on Security in Computing and Communications (SSCC-18) in Bangalore during September 19-22, 2018. (Springer).

14. R. Madhusudhan and Chaitanya S. Nayak, An Improved User Authentication Scheme for Telecare Medical Information Systems, Proceedings of the IEEE/ACM 3rd International Conference on Connected Health: Applications, Systems and Engineering Technologies: CHASE-MedSPT2018, Washington, D.C. during September 26-28, 2018

15. R. Madhusudhan and Shashidhara: Cross-Channel Scripting (XCS) Attacks in Web Applications: Detection and Mitigation Approaches. This paper has been accepted for presentation and publication at Second Cyber Security in Networking Conference (CSNet'18) in Paris, France during October 24-26, 2018. (IEEE).

16. R. Madhusudhan, Manjunath Hegde, Smart Card Based Remote User Authentication Scheme for Cloud Computing. UEMCON 2019: 905-910

17. Madhusudhan, R., Ahsan, M. Prevention of SQL Injection Attacks Using Cryptography and Pattern Matching, Lecture Notes in Networks and Systems, 450 LNNS, pp. 624-634, 2022

18. Madhusudhan, R., Surashe, S.V., Privacy and Security Comparison of Web Browsers: A Review, Lecture Notes in Networks and Systems, 451 LNNS, pp. 459-470, 2022

19. R. Madhusudhan, Vishnu K. K., A Framework for Blockchain-Based Scalable E-Voting System Using Sharding and Time-Slot Algorithm. AINA (6) 2024: 432-443

20. R. Madhusudhan, Shubham Kumar Thakur, P. Pravisha, Enhancing Intrusion Detection System Using Machine Learning and Deep Learning. AINA (3) 2024: 326-337

21. R. Madhusudhan, P. Pravisha, Blockchain Based Artificial Intelligence of Things (AIoT) for Wildlife Monitoring. AINA (5) 2024: 25-36

## **9. Visits Abroad**

1. Research interaction: University of Melbourne, Australia, Nov 20 – Dec 10, 2008.
2. International Conference: MALE, Maldives, May 27-29, 2011.
3. International Conference: Suzhou, China, March 10-12, 2014.
4. International Conference: OXFORD University, UK, April 7-10, 2014.
5. International Conference: Dubai, United Arab Emirates, September 14-15, 2016.
6. 6th International Conference on Computer and Communication Engineering 2016 (ICCCE 2016): Kuala Lumpur, Malaysia, July 25-27, 2016.
7. 6th International Conference on Communication and Network Security (ICCNS 2016): Nanyang Technological University, Singapore, November 26-29, 2016.
8. 2nd Cyber Security In Networking Conference in Paris (CSNet): Paris, France, October 24-26, 2018.
9. IEEE 10th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON): Columbia University, New York, USA, October 10-12, 2019.
10. 7th Cyber Security In Networking Conference in Paris (CSNet 2023): Montreal, CANADA, October 16-18, 2023.
11. The 38th International Conference on Advanced Information Networking and Applications (AINA-2024), Kitakyushu International Conference Center, Kitakyushu, Japan, April 17-19, 2024.

## **10. Outreach Activities**

- Member of Board of Studies of various Universities and Institutions.
- Reviewer for various International Journals of Springer, Elsevier, Taylor and Francis, Wiley, IEEE and other reputed publications.
- Doctoral Research Evaluator for various Universities and Institutions.

## **11. Areas of Interest**

- Computer Network Security
- Remote User Authentication
- Mobile Computing
- Post-Quantum Cryptography
- Blockchain Technology

## **12. Research articles published**

- Number of International Journal Papers - 14
- Number of International Conference Papers – 21

## **13. Administrative Roles**

- Vice President, PTA, NITK English Medium School, 2014 - 2016
- Secretary, NITK Students Co-op Society, 2015 - Till Date
- Secretary, Staff Recreation Club, 2017 - 2019
- HOD, Department of MACS, 2021 - 2023

#### 14. MCA/M. Tech projects Guided- 74 (From the Past 10 Years)

#### 15. Supervision of Ph.D

Awarded: 04

Sl.No.	Name	Date of Completion
1	Shashidara	25/04/2019
2	Manjunath V Hegde	18/07/2019
3	Chaitanya S Nayak	17/02/2021
4	K S Suvidha	01/03/2021

Ongoing: 03

Sl.No.	Name	Year of Admission
1	Pravisha P	2022
2	Rithesh S	2023
3	Abhinav K	2024

#### 16. Supervision of M.Tech by Research

Ongoing: 01

Sl.No.	Name	Year of Admission
1	Vishnu K K	2022

#### 17. Membership of Professional bodies

- IEEE (Institute of Electrical and Electronics Engineers}
- ACM (Association for Computing Machinery)
- ISTE (Indian Society for Technical Education)
- CSI (Computer Society of India)