

## **CURRICULUM VITAE**

1. **Name and full correspondence address:** Dr. R. Madhusudhan  
Professor and Head  
Dept. of M. A. C. S.,  
N. I. T. K., Surathkal,  
Karnataka State, India - 575025

2. **Email(s) and contact number(s) :** madhu@nitk.edu.in 8197623723

3. **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

4. **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

5. **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

## **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.

## **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 – 18

## **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 - Till date

## **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: 02

Sl.No.	Name	Year of Admission
1	Pravisha P	2022
2	Rithesh S	2023

## 16. Supervision of M.Tech by Research

Ongoing: 02

Sl.No.	Name	Year of Admission
1	Vishnu K K	2022
2	Shraddha Vasant Prasad	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)