



Dr. SHELBI JOSEPH

Associate Professor

Division of Information Technology

School of Engineering

CUSAT

Date of Birth 26/03/1968 (57 years)

Home Address Chunkapurackal (H), Villa no. 13, ABC.Homes
Judgemukku, Cochin-21

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Education qualification

Sl. No.	Degree	University	Year	Specialization
1.	BE	Madrass	1992	Computer Science
2.	M.Tech	NIT, Trichy	2006	Computer Science
3.	Ph.D	CUSAT, Kochi	2015	Faculty of Engineering
4.				

Teaching experience : 26 Years

Research Experience : 10 Years

Industrial Experience : 7 Years

Areas of interest : Software engineering, Software Reliability, Data Mining, Big Data Analytics, IOT, AI.

Date of joining (CUSAT) : 17/03/2001 FN

1st promotion (Date & designation) 3/4/2006, Senior Lecturer

2nd Promotion (Date & designation) 4/4/2010, Lecture Selection Grade

3rd Promotion (Date & designation) 4/4/2011, Assistant Professor

4th Promotion (Date & designation) **1/09/2016, Associate Professor**

5th Promotion (Date & designation) **28/03/2023, Professor**

Pervious/ other experience

No. of Publications

International journals :17

National Journal :1

International Conferences :7

National Conferences :3

Chapters : 2

Details of Publications

Published Papers in Journals

1. Temporal ECDSA: A timestamp and signature mask enabled ECDSA algorithm for IoT client node authentication, Computer communications 216(2024)307-323.
2. PR-MQTT: a novel approach for traffic reduction and message prioritization in IoT applications, Inderscience Enterprises, Web engineering and Technology, vol . 19, No. 1, 2024.
3. Internet of Things Network Performance : Impact of Message and Client sizes and Reliability Levels, ECTI Transactions on Electrical Engineering, Electronics and Communication, 2024.
4. EMCP: evolutionary multi-objective clustering protocol for prolonged lifetime of heterogeneous IoT networks, The journal of supercomputing, 2023.
5. Enhanced authentication security for IoT client nodes through T-ECDSA integrated into MQTT broker, The journal of supercomputing, 2023.
6. A novel verification framework to analyse security attacks in a fingerprint authentication system, IJITST, Inderscience, Vol. 13, No. 1, 2023.
7. Light -weight privacy enabled topology establishment and communication protocol for swarm IoT networks, Cluster Computing, Journal of Network software tools and applications, Springer 2022.
8. An effective authentication scheme for a secured IRIS recognition system based on a novel encoding technique, Measurement: Sensors, Elsevier, Vol. 25, 2023.
9. Decentralized blockchain based authentication for secure data sharing in Cloud-IoT , Journal of Ambient Intelligence and Humanized Computing 13(1), pp.769-787 Springer 2021.
10. FPGA implementation of fast & secure fingerprint authentication using trsg (true random and timestamp generator), Microprocessors and Microsystems, Elsevier Vol. 82, 2021.

11. Towards a Fast and Secured Fingerprint Authentication System based on a novel encoding scheme, IJEEE, SAGE Vol. 51, 2019.
12. Automatic Extraction of Hypernym & Meronym Relation in English Sentences Using Dependency Parser Procedia Computer Science vol 93,6-8 ,Elsevier, 2016.
13. A Novel Approach to Big Data Analysis Using Deep learning for the Detection of Android Malware and Identifying User Input Privacy" International Journal of scientific research in computer science Applications and Management studies. (2019).
14. IOT Service search using MQTT Protocol" International Journal of Computer Sciences and Engineering 2019.
15. novel approach to big data analysis using deep belief network for the detection of android malware" Indonesian Journal of Electrical Engineering and Computer science" December 2019.
16. A light weight encryption over big data in information stockpiling on cloud" Indonesian Journal of Electrical Engineering and Computer science" Aug 2019.
17. Twitter data Analytics using Distributed Computing " International journal of Engineering Technology Management and Applied Sciences(IJETMAS) Volume 5, Issue 6 June 2017. Pages 173-178.

Conference Publications

1. A study on the Performance of Supervised Algorithms for Classification in Sentiment Analysis" IEE TENCON 2019 International conference.
2. A Novel Approach for Handwriting Recognition in Malayalam Manuscripts using Contour Detection and Convolutional Neural Nets." 7th International Conference on Advances in Computing, Communications and Informatics (ICACCI18).
3. Review on Formal Verification of Basic Algorithms in Time Triggered Architecture" International Conference on Control, power,Communication and Computing Technologies (ICCPCT) 2018.
4. "Automatic Extraction of Hypernym & Meronym Relations in English Sentences Using Dependency Parser" 6th International Conference on Advances in Computing & Communications, ICACC 2016 , 6-8 September 2016, Cochin ,India.
5. Different Analytical Techniques for Big Data Analysis : A Review" International Conference on Energy, Communication, Data Analytics & Soft Computing(ICECDS) – 2017 IEEE Transactions
6. A Survey on Various Supervised Classification Algorithms" International Conference on Energy, Communication, Data Analytics & Soft Computing(ICECDS) – 2017 IEEE Transactions.
7. Twitter data Analytics using Distributed Computing " 6th International Conference on Engineering Technology, Science and Management Innovation(ICETSMI – 2017).

Chapters

1. Exploring Various Aspects of Gabour Filter in Classifying Facial Expression, Springer 2020.
2. 2. Light Weight Encryption Algorithms for Resource Constrained Devices in Internet of Things.CRC Press ,Taylor and Francis USA 2022.

Ph.D Produced

1. Dr. Harikrishnan D - Biometric Security.2021.
2. Jiby J Puthiyidam - Enhanced Techniques for handling Network Congestion, Urgent Messages and Client Authentication in IoT Networks.-2024.
3. Sheena N -Design of Energy -Efficient IoT Network Protocols with Improved Security, Privacy and Lifetime.-2024.

Memberships in professional bodies

Life Member The Indian Society for Technical Education

Short Term courses/ Conferences/Workshops/ Invited Lecture/ Training Programme

S.N.	Programme	Duration	Organized by	API Score
1	Two day FDP on “Excellence in Teaching & Transforming Classrooms”	4th to 5th NOV 2016, 2 days	School of Legal Studies ,CUSAT.	10
2	TEQIP Phase III STTP on Advances in Machine Learning	26-11-2018 to 30-11-2018, 5 days	Division of computer engineering, School of Engineering , CUSAT	10
3	FDP on Academic Leadership and Institution Building. DDU Kaushal Kendra (DDUKK), CUSAT.	20-02-2018 to 24-02-2018 , 5 days	DDU Kaushal Kendra (DDUKK), CUSAT.	10
4	FDP on Academic Leadership and Institution Building.	12-11-2018 to 18-11-2018 , 7 days	DDU Kaushal Kendra (DDUKK), CUSAT. .	10
5	TEQIP Phase II STTP on Mechanobiology- Exploring the Relevance of Engineering in Biological Systems.	22-10-2018 to 26-10-2018. , 5 days.	Division of Mechanical Engineering , School of Engineering , CUSAT.	10
6	Twinning programme on computer networks	20th to 25th june 2019, 6 days	Division of computer engineering and Information Technology, School of Engineering , CUSAT.	10
7	STTP on Advancements	1st july to 7th july	Division of	10

	in emerging technologies and applications.	2019, 7 days	Information Technology, School of Engineering , CUSAT.	
	International Conference			
1	International Conference on “Recent Trends in Engineering and Technology”.	School of Engineering , CUSAT.	3/10/2016 to 5/10/2016(3days)	10
2	6th International Conference on Advances in Computing and Communications (ICACC-2016)	Rajagiri School of Engineering and Technology ,Kochi, Kerala.	6/9/2016to 8/9/2016 (3days)	10
3	Inter national Conference on science and technology (ICST 2018)	Division of Applied sciences and Humanities , School of Engineering , CUSAT.	23rd to 25th April 2018, 3 days	10

Research Guidance

1. Jiby J Puthiyidam - Internet of Things
To identify communication vulnerabilities in IOT protocols and design an efficient methodology to assign priority to incoming messages.
2. Akhil P.V - Recommender Systems
To propose a novel hybrid recommender system with personalised recommendations driven by review sentiments.
2. Smitha Jasmine - Internet of Things
To identify the design level vulnerabilities of open source IOT protocols and find efficient methodologies for protocol design.
3. Divya Sreejith - Machine Learning
4. To predict the optimal time to start the growth modification treatment in dentofacial orthopaedics
5. Seetha Parameswaran - Machine Learning
Identifying and classifying accurately an expression from a static image of predefined quality to the nine standard facial expressions.
6. Sheena N - Industrial Cyber Physical System(IOT)
Modeling and verification of protocols in Industrial Cyber Physical System.
- &. Unni A.M – Hardware Implementation of TDMRCC.
7. Sariga Raj -Natural Language Processing.
8. Jayadev Shekar C.O- Network Security.

Academic Responsibilities

1. Head Division of Information Technology, SOE, CUSAT.
2. Staff Council Member CUSAT.
3. Treasurer Swandawanam - a charity organization ,
4. External Examiner Ph.D Viva Voce Anna University.
5. Ph.D Thesis reviewer M.G. University Kottayam.
6. Ph.D Thesis reviewer NIT Trichy.
7. Ph.D Thesis reviewer APJ Abdul Kalam Technological University Thiruvananthapuram.
8. Ph.D Thesis reviewer Anna University.

Declaration

I do hereby declare that the above information is true to the best of my knowledge and belief.

Date : 17/07/2025

Dr. Shelbi Joseph