

Faculty Profile

Dr. S. Salaja, M.E., Ph.D

Associate Professor,
Department of Computer Science and Engineering
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Scopus ID: 46161690400

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Academic Background

Degree	University	Year
Ph.D	Karunya Institute of Technology and Sciences (Deemed to be University)	2012
M.E	Madurai Kamaraj University	2002
B.E	Madras University	2000

Courses Taught

Undergraduate

- Theory of Computation
- Principles of Compiler Design
- Database Systems
- Distributed Systems
- Intelligent Systems

Post Graduate

- Advanced Algorithms
- Wireless Sensor Networks
- Advanced Operating Systems
- Mobile Computing & Communication
- Data Mining

Research Interests

- Pervasive Computing
- Cloud Computing
- Wireless Sensor Networks

- Software Defined Networks
- Data Analytics

Funded Projects

(Ongoing)

Co- Investigator: “Design and Development of IT Enabled Decision support tool for post crash care on road traffic injuries”, Health System Research, ICMR, Sanctioned. (Amount – ₹.15,31,080/-/-) Duration: June 2018 to May 2021.

(Completed)

Co- Investigator: “Effective patient friendly IT enabled tool for selection of desired health care services”, Health System Research, ICMR, Sanctioned. (Amount – ₹ 14,83,880/-) Duration: Dec 2013 to Nov 2016

Most recent Publications

Refereed Journal Publications

1. Renu Mary Daniel, Elijah Blessing Rajsingh, Salaja Silas, “ **An efficient eCK secure identity based Two Party Authenticated Key Agreement scheme with security against active adversaries**”, (2020) Information and Computation, art. no. 104630, DOI: 10.1016/j.ic.2020.104630. **(Elsevier Publisher)**
2. Titus Issac, Salaja Silas, Elijah Blessing Rajsingh, “**Investigative prototyping a tissue P system for solving distributed task assignment problem in heterogeneous wireless sensor network**”, (2020) Journal of King Saud University - Computer and Information Sciences, DOI: 10.1016/j.jksuci.2020.06.008
3. Titus Issac, Salaja Silas, Elijah Blessing Rajsingh, “**Prototyping a Scalable P-system-Inspired Dynamic Task Assignment Algorithm for a Centralized Heterogeneous**

- Wireless Sensor Network**", (2020) Arabian Journal for Science and Engineering, Springer. DOI: 10.1007/s13369-020-04700-6 (**Springer Publisher**)
4. Deva Priya I., Vidya Priya Darcini, S., Salaja Silas, "**Improved heart disease diagnostic iot model using machine learning techniques**", (2020) International Journal of Scientific and Technology Research, 9 (2), pp. 4442-4446.
 5. Renu Mary Daniel, Elijah Blessing Rajsingh, Salaja Silas, "**An efficient eCK secure certificateless authenticated key agreement scheme with security against public key replacement attacks**", (2019) Journal of Information Security and Applications, 47, pp. 156-172. DOI: 10.1016/j.jisa.2019.05.003. (**Elsevier Publisher**)
 6. Salaja Silas, Elijah Blessing Rajsingh, "**A Novel Patient Friendly IT Enabled Framework for Selection of Desired Health Care Provider**", International Journal of Medical Engineering and Informatics, Volume 11, Issue 1, 2019, Pages 14-40. (**Inderscience Publisher**)
 7. Renu Mary Daniel, Elijah Blessing Rajsingh, Salaja Silas, "**A forward secure signcryption scheme with ciphertext authentication for e-payment systems using conic curve cryptography**", Journal of King Saud University - Computer and Information Sciences, 2018, ISSN 1319-1578, <https://doi.org/10.1016/j.jksuci.2018.02.004>.
 8. Renu Mary Daniel, Elijah Blessing Rajsingh, Salaja Silas, "**Analysis of hierarchical identity based encryption schemes and its applicability to computing environments**", Journal of Information Security and Applications, Volume 36, October 2017, Pages 20-31, ISSN 2214-2126. (**Elsevier Publisher**)
 9. Renu Mary Daniel, Elijah Blessing Rajsingh, Salaja Silas, "**Deriving Practical Applicability of Hierarchical Identity Based Encryption in Massively Multiplayer Online Role Playing Games**", Procedia Computer Science, Elsevier, Vol 93, pp. 839-846, 2016. (**Elsevier Publisher**)
 10. Salaja Silas, Elijah Blessing Rajsingh, "**Performance Analysis on algorithms for selection of desired healthcare Services**", Perspectives in Science, Elsevier, vol. 8, pp.107-109, September 2016. (**Elsevier Publisher**)
 11. Immanuel John Raja Jebadurai, Elijah Blessing Rajsingh, Getzi Jeba Leelipushpam, Salaja Silas "**EDIS: An effective method for detection and isolation of sinkhole**

- attacks in mobile ad hoc networks**", International Journal of Wireless and Mobile Computing, , Vol 11(3), pp.171-181, 2016. **(Inderscience Publisher)**
12. Titus Issac, Salaja Silas, Elijah Blessing Rajsingh, "**Investigations on task and role assignment protocols in wireless sensor network**", Journal of Theoretical and Applied Information Technology, vol.89 issue 1, pp.210-219, 2016.
 13. Salaja Silas, Kirubakaran Ezra, Elijah Blessing Rajsingh, "**An Efficient Service Selection Framework for Pervasive Environments**", International Journal of Wireless and Mobile Computing, Vol.6, No. 1, pp. 80 – 90, 2013. **(Inderscience Publisher)**
 14. Salaja Silas, Kirubakaran Ezra, Elijah Blessing Rajsingh, "**A Novel Fault Tolerant Service Selection Framework for Pervasive Computing**", in Journal of Human-Centric Computing and Information Sciences, vol.2, no.5, March 2012. **(Springer Publisher)**
 15. Salaja Silas, Elijah Blessing Rajsingh and Kirubakaran Ezra, "**Efficient Service Selection Middleware using ELECTRE Methodology for Cloud Environments**", Information Technology Journal, vol.11, no.7, pp.868-875, 2012.
 16. Salaja Silas, Kirubakaran Ezra, Elijah Blessing Rajsingh, "**An Analysis on the Effect of Mobility and Load on Fault Tolerant Service Selection Framework for Pervasive Environments**", European Journal of Scientific Research, vol.67, no.2, pp. 301-308, 2012.
 17. Nimi P Baby, Salaja Silas, "**Study on Privacy and Security Methodologies in Cloud Storage**", International Journal of Advanced Research in Computer Science and Software Engineering Research Volume 4, Issue 1, January 2014 ISSN: 2277 128X
 18. Meenu Johnson, Salaja Silas, "**Position Aware and QoS based Service Discovery using TOPSIS for Vehicular Network**", International Journal of Engineering Science and Technology. Vol. 5, No. 3, pp. 576 – 582, March 2013.
 19. Meenu Johnson, Salaja Silas, "**Survey on Service Discovery Protocols in Vehicular Adhoc Networks**", International Journal of Engineering Research and Technology. Vol. 2, No. 3, pp. 1-4, March 2013.
 20. Hilda Lawrence, Salaja Silas, "**Efficient QoS Based Resource Scheduling using PAPRIKA Method for Cloud Computing**", International Journal of Engineering Science and Technology. Vol.5, No.3, pp. 638-643, March 2013.

21. Geethu Mohandas, Salaja Silas, "**Scalable ALARM: Anonymous Location Aided Routing in Hostile MANETS**", International Journal of Computer Science and Networks. Vol.2, No.2, pp. 103 -107, 2013.
22. Maheswaran R, S.G. Ponnambalam, Aravindan C, Salaja S, "**Ant Colony Optimization for single machine total weighted tardiness problem**", in ANJAC Journal of Sciences. Vol. 2, pp.39-44, Feb 2003.

Refereed Book Chapters

1. Renu Mary Daniel, Elijah Blessing Rajsingh, Salaja Silas, Sharmila Anand John Francis, "**An Efficient Provably Secure Identity-Based Authenticated Key Agreement Scheme for Intervehicular Ad Hoc Networks**", The Cognitive Approach in Cloud Computing and Internet of Things Technologies for Surveillance Tracking Systems, Intelligent Data-Centric Systems, pp.17-36, 2020. **(Elsevier Publisher)**
2. Titus Issac, Salaja Silas, Elijah Blessing Rajsingh, "**Dynamic and static system modeling with simulation of an eco-friendly smart lighting system**", Systems Simulation and Modeling for Cloud Computing and Big Data Applications, Advances in ubiquitous sensing applications for healthcare, pp 81-97, 2020. **(Elsevier Publisher)**
3. Titus Issac, Salaja Silas, Elijah Blessing Rajsingh, Sharmila Anand John Francis, "**Dynamic Self-Aware Task Assignment Algorithm for an Internet of Things-Based Wireless Surveillance System**", The Cognitive Approach in Cloud Computing and Internet of Things Technologies for Surveillance Tracking Systems, Intelligent Data-Centric Systems, pp. 37-50, 2020. **(Elsevier Publisher)**
4. Deva Priya Isravel, Salaja Silas, Elijah Blessing Rajsingh, "**Reliable Surveillance Tracking System based on Software Defined Internet of Things**", The Cognitive Approach in Cloud Computing and Internet of Things Technologies for Surveillance Tracking Systems, Intelligent Data-Centric Systems, pp. 1-16, 2020. **(Elsevier Publisher)**
5. Issac, Titus, Salaja Silas, and Elijah Blessing Rajsingh. "**Modelling a Deep Learning-Based Wireless Sensor Network Task Assignment Algorithm: An Investigative Approach.**" Deep Learning Strategies for Security Enhancement in Wireless Sensor Networks. IGI Global, 2020. 84-109.

6. Renu Mary Daniel, Elijah Blessing Rajsingh, Salaja Silas, " **An Efficient Forward Secure Authenticated Encryption Scheme with Ciphertext authentication based on Two Hard Problems**", Advances in Intelligent Systems and Computing, Vol. 645, pp. 123-133, 2018. **(Springer Verlag Publisher)**
7. Salaja Silas, Kirubakaran Ezra, Elijah Blessing Rajsingh, " **An Effective User-Driven Framework for Selection of Social Network Services**", Computational Social Networks: Security and Privacy, Computer Communication and Networks, vol 2. pp.229-246, June 2012. **(Springer Verlag Publisher)**

Refereed Conference Proceedings

1. Joyce Beryl Princess P., Salaja Silas, Elijah Blessing Rajsingh, " **Classification of Road Accidents Using SVM and KNN**", (2021) Advances in Intelligent Systems and Computing, 1133, pp. 27-41. DOI: 10.1007/978-981-15-3514-7_3. **(Springer)**
2. Deva Priya, I., Salaja Silas, Elijah Blessing Rajsingh, " **Sdn-based traffic management for personalized ambient assisted living healthcare system**", (2021) Advances in Intelligent Systems and Computing, 1167, pp. 379-388. DOI: 10.1007/978-981-15-5285-4_38. **(Springer)**
3. Titus Issac, Salaja Silas, Elijah Blessing Rajsingh, " **System modeling and simulation of an outdoor illumination system using a multi-layer feed-forward neural network**", (2021) Advances in Intelligent Systems and Computing, 1167, pp. 495-507. DOI:**(Springer)**
4. Joyce Beryl Princess P., Salaja Silas, Elijah Blessing Rajsingh, " **Performance comparison of machine learning models for classification of traffic injury severity from imbalanced accident dataset**", (2021) Advances in Intelligent Systems and Computing, 1167, pp. 361-369. DOI: 10.1007/978-981-15-5285-4_36. **(Springer)**
5. Joyce Beryl Princess P., Salaja Silas, Elijah Blessing Rajsingh, " **Machine learning approach for identification of accident severity from accident images using hybrid features**", (2020) 2020 International Conference for Emerging Technology, art. no. 9154079, DOI: 10.1109/INCET49848.2020.9154079

6. Vidya Priya Darcini, S., Deva Priya I., Salaja Silas, "**A Comprehensive Review on the Emerging IoT-Cloud based Technologies for Smart Healthcare**", 2020 6th International Conference on Advanced Computing and Communication Systems, ICACCS 2020, art. no. 9074457, pp. 606-611. DOI: 10.1109/ICACCS48705.2020.9074457
7. Joyce Beryl Princess, P., Salaja Silas, Elijah Blessing Rajsingh, "**Performance Analysis of Feature Detection and Description (FDD) Methods on Accident Images**", (2020) Communications in Computer and Information Science, 1240 CCIS, pp. 384-396. DOI: 10.1007/978-981-15-6315-7_32. (Springer)
8. Joyce Beryl Princess, P., Salaja Silas, Elijah Blessing Rajsingh, "**Performance Analysis of Edge Detection Algorithms for Object Detection in Accident Images**", (2019) 2019 Global Conference for Advancement in Technology, DOI: 10.1109/GCAT47503.2019.8978438
9. Titus Issac, Salaja Silas, Elijah Blessing Rajsingh, "**Investigations on PSO based task assignment algorithms for heterogeneous wireless sensor network**", (2019) 2nd International Conference on Signal Processing and Communication, ICSPC 2019 - Proceedings, art. no. 8976850, pp. 89-93. DOI: 10.1109/ICSPC46172.2019.8976850
10. Prabakaran, P., Isravel, D.P., Salaja Silas, "**A Review of SDN-Based Next Generation Smart Networks**", (2019) 2019 Proceedings of the 3rd International Conference on Computing and Communications Technologies, ICCCT 2019, art. no. 8824871, pp. 80-85. DOI: 10.1109/ICCCT2.2019.8824871
11. Deva Priya, I., Salaja Silas, "**Preferential Multi-Attribute Rank based Forwarding Node Selection in Software Defined Networks**", (2019) 2019 Proceedings of the 3rd International Conference on Computing and Communications Technologies, ICCCT 2019, art. no. 8824798, pp. 73-79. DOI: 10.1109/ICCCT2.2019.8824798
12. Titus Issac, Salaja Silas, Elijah Blessing Rajsingh, "**Luminaire-aware dynamic illumination role assignment scheme for a safe and green smart city**", (2019) 2019 Proceedings of the 3rd International Conference on Computing and Communications Technologies, ICCCT 2019, art. no. 8824914, pp. 94-98. DOI: 10.1109/ICCCT2.2019.8824914

13. Deva Priya, I., Salaja Silas, **“A Survey on Research Challenges and Applications in Empowering the SDN-Based Internet of Things”**, (2019) *Advances in Intelligent Systems and Computing*, 750, pp. 457-467. DOI: 10.1007/978-981-13-1882-5_39. **(Springer)**
14. Titus Issac, Salaja Silas, Elijah Blessing Rajsingh, **“Investigations on System Modeling Simulations for Solving Heterogeneous WSN Task Assignment Problem using Multilayer Feed Forward Neural Networks”**, (2019) *Materials Today: Proceedings*, 24, pp. 2439-2448. DOI: 10.1016/j.matpr.2020.03.774 **(Elsevier)**
15. Titus Issac, Salaja Silas, Elijah Blessing Rajsingh , **“Luminaire Aware Centralized Outdoor Illumination Role Assignment Scheme: A Smart City Perspective”**, (2019) *Advances in Intelligent Systems and Computing*, 750, pp. 443-456. DOI: 10.1007/978-981-13-1882-5_38 **(Springer)**
16. Elavarasi, R., Salaja Silas, **“ Survey on job scheduling in fog computing”**, *Proceedings of the International Conference on Trends in Electronics and Informatics, ICOEI 2019, 2019-April*, pp. 580-583.
17. Kavitha, T., Salaja Silas, **“ A survey on energy harvesting routing protocol for WSN”**, *Proceedings of the International Conference on Trends in Electronics and Informatics, ICOEI 2019*, art. no. 8862780, pp. 572-575, DOI: 10.1109/ICOEI.2019.8862780
18. Thompson K. Thomas, Salaja Silas, **“ An Analysis on Selection of Cloud Vendors Based on Subjective and Objective Parameters”**, *Proceedings of the 2nd International Conference on Inventive Systems and Control, 19-20 January 2018, Coimbatore, IEEE*, ISBN: 978-1-5386-0807-4.
19. Salaja Silas, Elijah Blessing Rajsingh, Titus Issac, **“WASF - Weighted Average based Subjective Feedback System for E-Healthcare Services”**, *2nd International Conference on Next Generation Computing Technologies*, 14th – 16th October 2016.
20. Girish Neelakanta Iyer, Salaja Silas, Ganesh Neelakanta Iyer **“ An optimized cloud based big data processing mechanism using selforganizing map in hadoop environments ”** *International conference on Green Computing and Internet of Things*, October 2015, Delhi, India, IEEE ISBN: 978-1-4673-7909-0.
21. Girish Neelakanta Iyer, Salaja Silas, **“A Comprehensive Survey on Data-Intensive Computing and MapReduce Paradigm in Cloud Computing environments”**,

- Proceedings of Informatics and Communication Technologies for Societal Development, 2015, pp 85-93.
22. Titus.I, Elijah Blessing Rajsingh, Salaja Silas, "**E-Health Navigator: A tool for selection of desired health care services**", Advances in Computer Science and Information Technology, Proceedings of International Academic Conference on Theoretical and Applied Aspects of Computational Science, E-Learning, Information and Communication Engineering", Vol.2, Issue.10, October - December 2015, pp. 54-58, ISSN: 2393 9907.
 23. Geethu Mohandas, Salaja Silas, "**Survey on Routing Protocols on Mobile ADHOC Networks**" IEEE International Multi Conference on Automation, Computing, Control, Communication and Compressed Sensing, 2013.
 24. Salaja Silas, Kirubakaran Ezra, Elijah Blessing Rajsingh, "**Scalable and Reliable Methodology for Service Selection in Pervasive Computing**", Proceedings of 3rd IEEE International Conference on Electronics Computer Technology, vol.1, pp. 188-191, ISBN: 978-1-4244-8678-6, 2011.
 25. Salaja Silas, Kirubakaran Ezra, Elijah Blessing Rajsingh, "**An User Oriented Methodology for Social Network Service Selection**", Proceedings of 2011 IEEE International Conference on Computational Intelligence and Computing Research, 2011. ISBN:978-1-61284-694-1.
 26. Salaja Silas and S. Durga, "**Private and Secure Service Discovery via Progressive Approach in Pervasive Environments**", National Conference on Cryptography and Network Scurity 2009., pp 250 – 256.
 27. Salaja Silas, Jobin Jose, "**Image Denoising – A Comparative Study**", Proceedings of National Conference on VLSI and Communication, 14th, 15th March 2008, pp.186-189, India.
 28. Salaja S., Rachana, "**Keyword Searches in Web Pages**", National Conference on Advances in Computer Science and Engineering, 24th March 2007, pp.001-007, India.
 29. Salaja S., Nishley E. Joseph, "**Computing Frequent Itemsets**", National Conference on Advances in Computer Science and Engineering, 24th March 2007, pp.079-083, India.
 30. Salaja S., N.D. Thamarai Selvi, "**Link Context in Classifier Based Crawlers**", National Conference on Data Mining and Data Warehousing, 17th February 2007, India.(Presented).Salaja S., Rachana, "**Mining Customer Care Dialogs**", National

Conference on Data Mining and Data Warehousing, 17th February 2007, India.(Presented).

31. Salaja S., Nishley E. Joseph, “**An Efficient Frequent Mining**”, National Conference on Data Mining and Data Warehousing, 17th February 2007, India.(Presented).

32. Salaja S., N.D. Thamarai Selvi, “**Object Modelling from Semistructured Dynamic Web Pages**”, National Conference on Advances in Computer Science and Engineering, 24th March 2007, pp.105-110, India.

33. Salaja Blessing, "**Line Detection in Document Images**", NCSS-2006, India.

Projects Guided

- Vehicle Detection using machine learning techniques
- Passenger detection using machine learning techniques
- Outpatient scheduling using machine learning techniques
- Nurse duty allocation using P-system
- Routing in Wireless sensor network
- Resource allocation in cloud computing
- Resource allocation in fog computing
- Routing Protocols on Mobile ADHOC Networks
- Private and Secure Service Discovery via Progressive Approach in Pervasive Environment
- Link Context in Classifier Based Crawlers

Memberships in Professional societies

- Member CSI
- Member IACSIT

Significant achievements:

- "**Best Poster**", titled "Service Selection Frameworks for Pervasive and Cloud Computing", Faculty Poster Presentation Meet, Karunya University, 29th September 2017
- "**Best Researcher**" Award – Department of Information Technology, School of Computer Science and Technology, 2013.

- **“Best Research Paper”** Award – Department of Information Technology, School of Computer Science and Technology, 2012.
- Received **IBM Knowledge Badge** - "**IBM Blockchain Essentials**", IBM.
- Received **IBM Knowledge Badge** - "**Cloud App Developer**", IBM.
- Received **IBM Knowledge Badge** - "**Robots are coming! Build IoT apps with IBM Watson, Swift, and Node-RED**", IBM.
- Received **IBM Knowledge Badge**, -"**Bluemix Essentials**", IBM.

Professional Service:

- Reviewer, Computers and Electrical Engineering, Elsevier Publications.
- Reviewer, Computers Networks, Elsevier Publications.
- Reviewer, Human Centric Computing and Information Sciences, Springer Publications.
- Reviewer, Journal of Cluster Computing, Springer Publications.
- Reviewer, Journal of SuperComputing, Springer Publications.
- Reviewer, Taylor and Francis Journals.
- Reviewer, International Journal of Signal and Imaging Systems Engineering, Inderscience Publishers
- Reviewer, International Journal of Cloud Computing, Inderscience Publishers,
- Reviewer, International Journal of Sensor Networks, Inderscience Publishers.
- Reviewer, International Journal of Ad Hoc and Ubiquitous Computing, Inderscience Publishers.
- Reviewer, Journal of Computer Science, Science Publications.
- Track Chair & Reviewer, International Conference on Big Data and Cloud Computing, Karunya University, 23rd March 2018.
- Resource Person, 2-Days National Level Hands-on Cloud and Fog Computing, Karunya University, 23rd to 24th February 2018.
- Resource Person, Internetworking Techniques and Framework for Next Generation Smart Environments, Two Week AICTE Sponsored Faculty Development Program, Kumaraguru College of Technology, 11th December 2017 to 24th December 2017.

- Track Chair & Reviewer, International Conference on Big Data and Cloud Computing, Karunya University, 1st April 2017.
- Panel Member, Selection of Best Posters, Faculty Poster Presentation Meet", Karunya University, 29th September 2017.
- IBM Bluemix Trainer, IBM Bluemix Cloud Application Developer, 2016.
- Member, International Advisory Committee, "International Conference on Novel Issues and Challenges in Science and Engineering", Noorul Islam University, July 2016.
- Resource Person, "Hands-on workshop Setting up Private Cloud", March 2016.
- Resource Person, Colloquium on "Research Practices", Karunya University, February, 2016.
- Resource Person, Open-Stack- Hands on Workshop, Karunya University, February, 2016.
- Convener, Two Days National Workshop on Cloud driven Application Development. 2014.
- Member, Best Project Evaluation "CSI National project contest", 2014
- Session Co-Chair & Reviewer, International Conference on Informatics and Communication Technologies for Societal Development, 2014.
- Committee Member, Asian Conference on Membrane Computing, 2014.
- Convener, National Workshop on NS2, Karunya University, October, 2013.
- Session Chair, International Conference on Innovations in Intelligent Instrumentation, Optimization and Signal Processing, Karunya University, 2013.
- Jury, CSI Discover Thinking 2nd National CSI Student Project Contest, 2013.
- Paper review committee member for the International Conference on Language Development and Computing Methods, 2nd December 2010, India.
- Observer, JEE-Main 2014.
- Observer, JEE-Main 2013.