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<u>Area of Specialization</u>: Internet of Vehicles, UAV communications, IoT, 5G communications, Machine learning, Wireless Security

LIST OF PUBLICATIONS (Last 5 years)

JOURNALS

IEEE

- Gunasekaran Raja, Geetha Vijayaraghavan, Sudha Anbalagan, Sudhakar Theerthagiri, Saran Vaitangarukav Suryanarayan, Xin-Wen Wu, "SP-CIDS: Secure and Private Collaborative IDS for VANETs," *IEEE Transactions on Intelligent Transportation Systems*, DOI: 10.1109/TITS.2020.3036071, 2020
- 2. Gunasekaran Raja, Sudha Anbalagan, Geetha Vijayaraghavan, Priyanka Dhanasekaran, Yasser Al-Otaibi, Ali Kashif Bashif, "Energy-Efficient End-to-End Security for Software Defined Vehicular Networks," *IEEE Transactions on Industrial Informatics*, DOI: 10.1109/TII.2020.3012166, 2020
- 3. Gunasekaran Raja, Aishwarya Ganapathisubramaniyan, Sudha Anbalagan, Sheeba Backia Marry Baskaran, Kathiroli Raja, and Ali Kashif Bashir, "Intelligent Reward based Data Offloading in Next Generation Vehicular Networks," **IEEE Internet of Things Journal**, vol. 7, no. 5, pp. 3747 3758, May 2020
- 4. Sunil Jacob, Varun G Menon, Saira Joseph, Vinoj P G, Alireza Jolfaei, Jibin Lukose, Gunasekaran Raja, "Novel Spectrum Sharing Scheme using Dynamic Long Short-Term Memory with CP-OFDMA in 5G Networks", IEEE Transactions on Cognitive Communications and Networking, DOI:10.1109/TCCN.2020.2970697, 2020
- 5. Amjad Ali, Li Feng, Ali Kashif Bashir, Shaker El-Sappagh, Syed Hassan Ahmed, Muddesar Iqbal and Gunasekaran Raja, "Quality of Service Provisioning for Heterogeneous Services in Cognitive Radio-enabled Internet of Things," *IEEE Transactions on Network Science and Engineering*, vol. 7, issue 1, pp. 328-342, Jan.-Mar. 2020
- 6. Rajakumar Arul, Gunasekaran Raja, Alaa Omran Almagrabi, Mohammed Saeed Alkatheiri, Sajjad Hussain Chauhdary, Ali Kashif Bashir "A Quantum Safe Key Hierarchy and Dynamic Security Association for LTE/SAE in 5G Scenario," *IEEE Transactions on Industrial Informatics*, vol. 16, no. 1, pp. 681 690, Jan. 2020
- 7. Rajakumar Arul, Gunasekaran Raja, Ali Kashif Bashir, Junaid Chaudhry and Amjad Ali, "A Console GRID leveraged Authentication and Key Agreement Mechanism for LTE/SAE," *IEEE Transactions on Industrial Informatics*, vol. 14, no. 6, pp. 2677–2689, Jun. 2018.
- 8. Sheeba Backia Marry Bhaskaran, Gunasekaran Raja, Ali Kashif Bashir and Masayuki Murata, "QoS-aware frequency-based 4G+ relative authentication model for next generation LTE and its dependent public safety networks," *IEEE Access*, vol. 5, pp. 21977–21991, Nov. 2017.
- 9. Rajakumar Arul, Gunasekaran Raja, Sudha Anbalagan, Dhananjay Kumar and Ali Kashif Bashir, "The Future Usage of Smart Phones," *IEEE Internet Policy Newsletter*, Mar. 2017.

ELSEVIER

- 10. Sudha Anbalagan, Dhananjay Kumar, Gunasekaran Raja, Alkondan Balaji "SDN assisted Stackelberg Game model for LTE-WiFi offloading in 5G networks," *Digital Communication and Networks*, vol.5, Issue 4, pp.268-275, Nov.2019
- 11. Sudha Anbalagan, Dhananjay Kumar, Mercy Faustina J, Gunasekaran Raja, Waleed Ejaz and Ali Kashif Bashir, "SDN-Assisted Efficient LTE-WiFi Aggregation in Next Generation IoT Networks," *Future Generation Computer Systems*, DOI: 10.1016/j.future.2017.12.013, 2017.
- 12. Kottilingam Kottursamy, Gunasekaran Raja, Jayashree Padmanaban and Vaishnavi Srinivasan, "An Improved Database Synchronization Mechanism for Mobile Data using Software Defined Networking Control," *Journal on Computers and Electrical Engineering*, vol. 57, pp. 93–103, Feb. 2016.

SPRINGER

13. Gunasekaran Raja, Anil Thomas, "SAFER: Crowdsourcing based Disaster Monitoring System using Software-Defined Fog Computing", *Journal on Mobile Networks and Application*, DOI: 10.1007/s11036-019-01267-x, 2019.

- 14. Anil Thomas, Gunasekaran Raja, "FINDER: A D2D based Critical Communications Framework for Disaster Management in 5G," *Peer-to-Peer Networking and* Applications, vol. 12, issue 4, pp.912-923, 2019.
- 15. Ramkumar Jayaraman, Gunasekaran Raja, Ali Kashif Bashir, Chauhdary Sajjad Hussain, Ali Hassan and Mohammad A. Alqarni, "Interference Mitigation Based on Radio Aware Channel Assignment for Wireless Mesh Networks," *Wireless Personal Communications*, vol. 101, issue 3, pp. 1539–1557, Aug. 2018.
- 16. Ramkumar Jayaraman and Gunasekaran Raja, "Channel assignment based coding mechanism for reliable transmission for smart cities," *Cluster Computing*, DOI: 10.1007/s10586-017-1193-9, Sep. 2017.
- 17. Rajakumar Arul, Gunasekaran Raja, Kottilingam Kottursamy, Sathya Pavithra and Swaminathan Venkatraman, "User Path Prediction Based Key Caching and Authentication Mechanism for Broadband Wireless Networks," *Wireless Personal Communications*, vol. 94, issue 4, pp. 2645–2664, Jun. 2017.
- 18. Sudha Anbalagan, Dhananjay Kumar, Dipak Ghosal, Gunasekaran Raja and Muthuvalliammai V, "SDN-Assisted Learning Approach for Data Offloading in 5G HetNets," *Mobile Networks and Applications*, vol. 22, no. 4, pp. 771–782, 2017.
- 19. Ramkumar Jayaraman, Gunasekaran Raja, Dipak Ghosal, Rajakumar Arul and Sabareesh Kumar A, "A compatibility vector technique for cooperative scheduling and channel assignment algorithm in broadband wireless networks," *Mobile Networks and Applications*, vol. 22, no.4, pp.730–742, 2017.
- 20. Sheeba Backia Mary Baskaran and Gunasekaran Raja, "Blind Key Distribution Mechanism to Secure Wireless Metropolitan Area Network, "Journal on CSI Transactions on ICT, vol. 4, issue. 2, pp. 157–163, Dec. 2016.
- 21. Gunasekaran Raja, Sheeba Backia Mary Bhaskaran, Dipak Ghosal and Jayashree padmanabhan, "Reduced overhead Frequent User Authentication in EAP- Dependent Broadband Wireless Networks," *Mobile Networks and Applications*, vol. 21, issue 3, pp. 523–538, Jun. 2016.
- 22. Kathiroli R, Arivudainambi D, Gunasekaran R, Jayashree P, Aarthi R and Syama B, "Novel Key Management Scheme to Minimize Handoff Latency in IEEE 802.16m Networks," *National Academy Science Letters*, vol. 39, no. 1, pp. 29-33, Feb. 2016.

WILEY

23. Ali Kashif Bashir, Rajakumar Arul, Shakila Basheer, Gunasekaran Raja, Ramkumar Jayaraman and Nawab Muhammad Faseeh Qureshi, "An optimal multitier resource allocation of cloud RAN in 5G using machine learning," *Transactions on Emerging Telecommunications Technologies*, https://doi.org/10.1002/ett.3627, April 2019.

SELECTIVE PUBLICATIONS- CONFERENCES

- 24. Gunasekaran Raja, Saran V S, Sudha Anbalagan, Ali Kashif Bashir, Muhammad Imran, Nidal Naseer, "Collisionless Fast Pattern Formation Mechanism for Dynamic Number of UAVs", *IEEE GLOBECOM 2020. (Accepted)*
- 25. Gunasekaran Raja, Yelisetty Manaswini, Gaayathri Devi Vivekanandan, Harish Sampath, Kapal Dev, Ali Kashif Bashir, "Al-Powered Blockchain A Decentralized Secure Multiparty Computation Protocol for IoV," IEEE INFOCOM 2020, Toronto, Canada, Jul. 6-9, 2020, pp. 865-870.
- 26. Gunasekaran Raja, Priyanka Dhanasekaran, Sudha Anbalagan, Aishwarya Ganapathisubramaniyan, Ali Kashif Bashir, "SDN-enabled Traffic Alert System for IoV in Smart Cities," *IEEE INFOCOM 2020*, Toronto, Canada, Jul. 6-9, 2020, pp. 1093-1098.

OTHER JOURNALS

- 27. Gunasekaran Raja and Ramkumar J, "Cooperative Cross Layer Topology for Concurrent Transmission Scheduling Scheme in Broadband Wireless Networks," *International Journal of Computer, Electrical, Automation, Control and Information Engineering*, vol. 10, no. 6, pp. 876–885, 2016.
- 28. Gunasekaran Raja, Ramkumar J, Rajakumar Arul and Kottilingam Kotursamy, "Network Coding with Buffer Scheme in Multicast for Broadband Wireless Network," *International Journal of Computer, Electrical, Automation, Control and Information Engineering*, vol. 10, no. 6, pp. 898–903, 2016.

OTHER CONFERENCES

- 29. Renuka Narayanan, Jayashree S, Nisha Deborah Philips, A.M. Saranya, Sahaya Beni Prathiba and Gunasekaran Raja, "TLS Cipher Suite: Secure Communication of 6LoWPAN Devices", in *Proc.* 11th IEEE International Conference on Advanced Computing (ICoAC), Chennai, Dec. 2019.
- 30. Geetanjali V, Indraja Subramanian, Gunashree Kannan, Sahaya Beni Prathiba and Gunasekaran Raja, "IoTexpert: Interconnection, Interoperability and Integration of IoT Platforms", in *Proc.* 11th IEEE International Conference on Advanced Computing (ICOAC), Chennai, Dec. 2019.

- 31. Kriti Gupta, Sahaya Beni Prathiba and Gunasekaran Raja, "Controlling Data Congestion by Efficient Backpressure Routing Algorithm in V2V Communication for Autonomous Vehicles", in *Proc.* 11th IEEE International Conference on Advanced Computing (ICOAC), Chennai, Dec. 2019.
- 32. Nirupama S, Harini R, Akshaya K, Devipriya B, Sahaya Beni Prathiba and Gunasekaran Raja, "Securing Data Transmission against Multi Cell MIMO Eavesdropper in 5G Wireless Networks using MOSPR", in *Proc.* 11th IEEE International Conference on Advanced Computing (ICoAC), Chennai, Dec. 2019
- 33. G. Raja, S. Anbalagan, V. S. Narayanan, S. Jayaram and A. Ganapathisubramaniyan, "Inter-UAV Collision Avoidance using Deep-Q-Learning in Flocking Environment," 2019 IEEE 10th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON), Columbia University, New York, **USA**, Oct. 10-12, 2019, pp. 1089-1095.
- 34. S. Anand, G. Raja, G. Anand, S. H. Chauhdary and A. K. Bashir, "Mirage: A Protocol for Decentralized and Secured Communication of IoT Devices," 2019 IEEE 10th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON), New York, **USA**, Oct. 10-12, 2019, pp. 1074-1080.
- 35. S. Anand, G. Raja and A. Ganapathisubramaniyan, "AECC: An Enhanced Public Key Cryptosystem for User Defined Messages," 2019 IEEE 10th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON), New York, **USA**, Oct. 10-12, 2019, pp. 0673-0678.
- 36. Gunasekaran Raja, Aishwarya Ganapathisubramaniyan, Gayatri Iyer Sethuraman, Sajjad Hussain Chauhdary and Ali Hassan, "Secured LTE-Wi-Fi Offloading Using RTT Based Evading Malicious Access Point (EMAP) Algorithm", in Proc. IEEE 4th International Conference on Computer and Communication Systems (ICCCS), **Singapore**, Feb. 23-25, 2019, pp. 527-532.
- 37. Gunasekaran Raja, Aishwarya Ganapathisubramaniyan, Gokul Anand and Gowshika, "Intrusion Detector for Blockchain based IoT Networks," in Proc. 10th IEEE International Conference on Advanced Computing (ICoAC), Chennai, Dec. 2018, pp. 328–332.
- 38. Gunasekaran Raja, Aishwarya Ganapathisubramaniyan, Madhumitha Sri Selvakumar, Thiruveni Ayyarappan and Karthikeyan Mahadevan, "Cognitive Intelligent Transportation System for Smart Cities," in Proc. 10th IEEE International Conference on Advanced Computing (ICoAC), Chennai, Dec. 2018, pp. 146–152.
- 39. Sheeba Backia Mary Baskaran and Gunasekaran Raja, "A Lightweight Incognito Key Exchange Mechanism for LTE-A Assisted D2D Communication," in Proc. 9th IEEE International Conference on Advanced Computing (ICoAC), Chennai, Dec. 2017, pp. 301–307.
- 40. Rajakumar Arul, Gunasekaran Raja and Ramkumar Jayaraman, "Simple & Secure Mechanism for establishing connection between D2D Communication in 5G Scenario," in Proc. SAIRAP International Conference on Internet of Things IoT (ICIOT), Srilanka, Aug. 2017, pp. 45–50.
- 41. Gunasekaran Raja and Kottilingam Kottursamy, "SDN Assisted Middlebox Synchronization Mechanism for Next Generation Mobile Data Management System," in Proc. 14th IEEE International Conference on Advanced and Trusted Computing (ATC), San Francisco, USA, Aug. 4-8, 2017, pp. 1502–1508.
- 42. Bharathi U, Mercy Faustina J, Elavarasi B and Gunasekaran R, "Energy Efficient Data Offloading Mechanism," in Proc. IEEE International Conference on Telecommunication, Power Analysis and Computing Techniques (ICTPACT), Apr. 6-8, 2017.
- 43. Arunkumar Arulappan, Gunasekaran Raja, Sheeba Backia Mary Baskaran, RajaKumar Arul, Kottilingam Kottursamy, Ramkumar Jayaraman and Adhimuga Sivasakthi, "Sensor-to-Vehicle Communication by using VANETs for Urban Parking," in Proc. International Conference on Innovations in Engineering and Technology (ICET), Singapore, May 21-22, 2016, pp. 19–27.
- 44. Rajakumar Arul, Gunasekaran Raja, Kottilingam Kottursamy, Ramkumar Jayaraman, Sheeba Backia Mary Baskaran, Sathya Pavithra and Swaminathan Venkatraman, "Fast Authentication Using User Path Prediction in Wireless Broadband Access," in Proc. International Conference on Innovations in Engineering and Technology (ICET), Singapore, May 21 22, 2016, pp. 57–65.
- 45. Ramkumar Jayaraman, Gunasekaran Raja, Rajakumar Arul, Sheeba Backia Mary Baskaran, Arunkumar Arulppan and Kottilingam Kottursamy, "BAY-RACE: Bayesian-Resource Allocation Conditional Entities algorithm under uncertainty in distributed WMN," in Proc. International Conference on Innovations in Engineering and Technology (ICET), Singapore, May 21 22, 2016, pp. 66–74.
- 46. Sheeba Backia Mary Baskaran, Gunasekaran Raja, Ramkumar Jayaraman, Arunkumar Arulappan, Rajakumar Arul, Kottilingam Kottursamy, "Fault-tolerant Interworking Authentication Model for Non 3GPP 3GPP Access," *in Proc. International Conference on Innovations in Engineering and Technology (ICET)*, **Singapore**, May 21-22, 2016, pp. 75–82.
- 47. Kottilingam Kottursamy, Gunasekaran Raja and K. Saranya, "A Data Activity-Based Server-Side Cache Replacement for Mobile Devices," in Springer Proc. Artificial Intelligence and Evolutionary Computations in Engineering Systems, vol. 395, Feb. 2016, pp. 579–589.