

# Sankita Patel

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Nationality: Indian

## Current position

Associate Professor, Department of Computer Science and Engineering, SVNIT, Surat

## Areas of specialization

Information Security, Privacy Preserving Techniques, Security and Privacy Issues in Online Social Networks, Security in Internet of Things, Software Requirements Analysis

## Working Experience

December 21, 2023 - till date: Assistant Professor, SVNIT, Surat  
May 28, 2009 - December 20, 2023: Assistant Professor, SVNIT, Surat  
November 25, 2008 - May 27, 2009: Associate Professor, CKPCET, Surat  
July 14, 2003 - November 24, 2008: Assistant Professor, CKPCET, Surat  
July 2, 2003 - July 13, 2003: Lecturer(Adhoc), CKPCET, Surat

## Education

2002 B.E. in Computer Engineering, Sardar Vallabhbhai Regional College of Engineering (SVREC),  
Surat  
2008 M.TECH. in Computer Engineering, SVNIT, Surat  
2015 PHD, SVNIT, Surat

## Research Projects

—Co-Investigator of the project titled Development and Analysis of Lightweight Cryptography for Sensor Nodes and IoT. Funded by Defense Research and Data Organization (DRDO), Govt.

of India, PI-Dr. Arvind Selwal, Central University Jammu, 41.97 Lakh, October 2020. (Ongoing)

—Co-Investigator of the Collaborative research project by industry-academia: SVNIT and SCMExpert (US based digital transformation company engaged into Shipment Monitoring and Supply Chain Management Solutions). Design of IoT device for cold chain management, Design of Middleware of IoT platform, June 2019-Jan 2020

—Co-Investigator of the project titled "Information Security Education and Awareness (ISEA) Phase II funded by Ministry of Electronics and Information Technology (MeitY), Govt of India, New Delhi, 2016 onwards (Ongoing)

—Co-Investigator of the project titled "A Secure Data Aggregation System and an Intrusion Detection Systems for Wireless Sensor Networks" funded by the Department of Electronics and Information Technology, Ministry of Communications and Information Technology, Govt of India, New Delhi. Project Commencement: September 2011, Project Completed: March 2015. Budget: Rs. 48.864 Lakhs

—Co-Investigator of the project titled "Investigating Anti-Replay Algorithms for Link Layer Security Architecture in Wireless Sensor Networks" funded under the Minor Research Project Scheme of Gujarat Council of Science and Technology (GUJCOST), Govt of Gujarat, Gandhinagar. Project Commencement: April 2013. Project Completed: March 2016. Budget: Rs. 2.44 Lakhs

## Publications

### JOURNAL ARTICLES

- 2024 Vivek H. Champaneria, Sankita J. Patel, Mukesh A. Zaveri, A cancelable biometric authentication scheme based on geometric transformation, *Multimedia Tools and Applications*, Springer, June 2024. <https://doi.org/10.1007/s11042-024-19689-5> (SCI)
- 2024 Prarthana J Mehta, Balu L Parne, Sankita J Patel, PF-AKA: PUF-FSM based Authentication and Key Agreement Framework for IoT based Smart Grid Networks, *Cluster Computing*, pp. 1-19, April 2024, Springer. (SCI)
- 2023 Khushboo Patel, Shivangi Shukla, Sankita Patel. A Novel and Provably Secure Mutual Authentication Protocol for Cloud Environment using Elliptic Curve Cryptography and Fuzzy Verifier. *Concurrency and Computation: Practice and Experience*, July 2023, Wiley. (SCI)
- 2023 Prarthana Mehta, Balu Parne and Sankita Patel. MAKA: Multi Factor Authentication and Key Agreement Scheme for LoRa based Smart Grid Communication Services. *IETE journal of Research*, May 2023, Taylor and Francis. (SCI)
- 2023 Prarthana Mehta, Balu Parne and Sankita Patel. SE-LAKAF: Security enhanced lightweight authentication and key agreement framework for smart grid network. *Peer-to-Peer Networking and Applications*, pages 1-23, May 2023, Springer, <https://doi.org/10.1007/s12083-023-01494-w> (SCI)
- 2023

- Shivangi Shukla and Sankita Patel. A design of provably secure multi-factor ECC-based authentication protocol in multi-server cloud architecture. *Cluster Computing*, pages 1-22, May 2023, Springer, <https://doi.org/10.1007/s10586-023-04034-6> (SCI)
- 2023 Hiral Trivedi and Sankita Patel. Key-aggregate searchable encryption with multi-user authorization and keyword untraceability for distributed IoT healthcare systems. *Transactions on Emerging Telecommunications Technologies*, pages-e4734, January 2023, e4734, Wiley, doi:10.1002/ett.4734 (SCI)
- 2023 Hiral Trivedi and Sankita Patel. Homomorphic cryptosystem-based secure data processing model for edge-assisted IoT healthcare systems, *Internet of Things Journal*, vol. 22, 100693, Elsevier. (SCI)
- 2022 Bintu Kadhiwala and Sankita Patel. Privacy-preserving collaborative social network data publishing against colluding data providers, *International Journal of Information and Computer Security*, vol. 19, no. 3-4, pp.346-378, Inderscience Publishers. (SCOPUS)
- 2022 Hiral Trivedi and Sankita Patel. Dynamically scalable privacy-preserving authentication protocol for distributed IoT based healthcare service providers, *Wireless Networks*, pp. 1-25, December 2022, Springer. (SCI)
- 2022 Shivangi Shukla and Sankita Patel. A novel ECC-based provably secure and privacy-preserving multi-factor authentication protocol for cloud computing, *Computing*, pp. 1-30, January 2022, Springer. (SCI)
- 2021 Unnati Shah, Sankita Patel and Devesh C. Jinwala. Detecting Intra-Conflicts in Non-Functional Requirements, *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, vol. 29, no. 3, pp. 435-461, World Scientific Publishing, June 2021. (SCOPUS)
- 2021 Shivangi Shukla and Sankita Patel. Securing Fingerprint Templates by Enhanced Minutiae-based Encoding Scheme in Fuzzy Commitment, *IET Information Security*, vol. 15, no. 3, pp. 256-266, Wiley, April 2021. (SCI)
- 2020 Hiral Trivedi and Sankita Patel. Design of Secure Authentication Protocol for Dynamic User Addition in Distributed Internet-of-Things, *Computer Networks*, vol. 178, article no. 107335, Elsevier, May 2020. (SCI)
- 2020 Unnati Shah, Sankita Patel and Devesh Jinwala. Constructing a Knowledge-Based Quality Attributes Relationship Matrix to Identify Conflicts in Non-Functional Requirements, *Journal of Computational and Theoretical Nanoscience*, vol. 17, no. 1, pp. 122-129, American Scientific Publishers, January 2020. (SCOPUS)
- 2018 Kamalkumar Macwan and Sankita Patel. K-NMF Anonymization in Social Network Data Publishing, *The Computer Journal*, vol. 61, no. 4, pp. 601-613, Oxford press, April 2018. (SCI)
- 2017 Kamal Macwan and Sankita Patel. K-Degree Anonymity Model for Social Network Data Publishing, *Advances in Electrical and Computer Engineering*, vol.17, no.4, pp.117-124, Stefan cel Mare

- University of Suceava, November 2017, doi:10.4316/AECE.2017.04014. (SCI)
- 2016 Vivaksha Jariwala and Sankita Patel. An Improved Approach for Secure Data Aggregation in Wireless Sensor Networks, *International Journal of Computer Applications*, vol. 137, no.9, pp. 10-14, Foundation of Computer Science, USA, March 2016. (SCOPUS)
- 2016 Unnati Shah, Devesh Jinwala and Sankita Patel. An excursion to software development life cycle models: an old to ever-growing models, *ACM SIGSOFT Software Engineering Notes*, vol. 41, no. 1, pp.1-6, ACM, Feb 2016. (SCOPUS)
- 2015 Sankita Patel, Dharmen Punjani and Devesh Jinwala. An Efficient Approach for Privacy Preserving Distributed Clustering in Semi-honest Model using Elliptic Curve Cryptography, *International Journal of Network Security*, vol. 17, no. 3, pp. 328-339, Candy C. H. Lin, Taiwan, May 2015
- 2014 Sankita Patel, Mitali Sonar and Devesh C Jinwala. Privacy Preserving Distributed K-Means Clustering in Malicious Modle using Verifiable Secret Sharing scheme. *International Journal of Distributed Systems and Technology*, vol. 5, no. 2, pp. 44-70, IGI-Global, April 2014. (SCOPUS)
- 2014 Sankita Patel, Ankit Chouhan and Devesh C Jinwala. Comparative Evaluation of Elliptic Curve Cryptography based Homomorphic Encryption schemes for a Novel Security Multiparty Computation, *Journal of Information Security*, vol.5 no.1, Scietific Research Publishing, January 2014, DOI: 10.4236/jis.2014.51002
- 2012 Rutvij Jhaveri, Sankita Patel, Devesh Jinwala. Improving Route Discovery for AODV to Prevent Blackhole and Grayhole Attacks in MANETs, *INFOCOMP Journal of Computer Science*, vol. 11, no. 1, pp. 1-12, Federal University of Lavras, Brazil, ISSN: 1807-4545, March 2012 (SCOPUS)
- 2010 Devesh Jinwala, Dhiren Patel, Sankita Patel and K S Dasgupta. Optimizing the Replay Protection at the Link Layer Security Framework in Wireless Sensor Networks. *IAENG International Journal of Computer Science*, International Association of Engineers Publication, Hong Kong, 2010
- CONFERENCES(INTERNATIONAL)
- 2024 Prarthana J Mehta, Balu L Parne, Sankita J Patel, ESAF: An Efficient and Secure Authentication Framework for V2G Network, 16th International Conference on COMMunication Systems and NETWORKS (COMSNETS), pp. 945-952, January 2024, IEEE
- 2024 Kumar Adarsh, Soundarva Kumar, Gohil Bhavesh, Sankita Patel, Rajvansh Sarang and Sanghvi H P. Forensics Analysis of TOR Browser. *Proceedings of ICISPD, Lecture Notes in Electrical Engineering*, Springer, 2024, pp. 331-341
- 2023 Gunemoni Prudvi Raj, Prarthana J Mehta, Balu L Parne, Sankita J Patel, PUF based Authentication and Key Agreement Framework for Internet of Drones, *IEEE 20th India Council International Conference (INDICON)*, December 2023, pp. 491-496, IEEE

- 2022 Mansi Singhal, Prarthana Mehta, Sankita Patel and Balu Parne. Device Fingerprinting Based Multifactor Authentication in Lora Device, IEEE INDICON, December 24-26, 2022, Kochi, India.
- 2022 Divya Jyoti, Prarthana Mehta, Balu Parne and Sankita Patel. ALKAF: An Anonymous Lightweight Key Agreement Framework For Smart Grid Network, IEEE INDICON, December 24-26, 2022, Kochi, India.
- 2022 Hrishabh Sharma, Ujjawal Kumar, Amruta Mulay, Rishabh Kumar and Sankita Patel. Democratic Aftermarket for Domain Names. In: Rao, U.P., Patel, S.J., Raj, P., Visconti, A. (eds) Security, Privacy and Data Analytics. Lecture Notes in Electrical Engineering, vol 848. Springer, Singapore, April 2022.
- 2021 Hiral Trivedi and Sankita Patel. Privacy Preserving Scalable Authentication Protocol with Partially Trusted Third Party for Distributed Internet-of-Things, In Proceedings of the 18th International Conference on Security and Cryptography (SECRYPT), ISBN 978-989-758-524-1, ISSN 2184-7711, pp. 812-818, July 2021.
- 2020 Unnati Shah, Sankita Patel, and Devesh Jinwala. A Semi-automated Approach to Generate an Adaptive Quality Attribute Relationship Matrix. In: Madhavji N., Pasquale L. (eds) 26th International Working Conference on Requirements Engineering: Foundation for Software Quality, REFSQ 2020, Pisa, Italy, March 24-27, 2020, LNCS vol. 12045, pp 239-256, Springer
- 2019 Bintu Kadhiwala and Sankita Patel. A Novel k-Anonymization Approach to Prevent Insider Attack in Collaborative Social Network Data Publishing. In: Garg D., Kumar N., Shyamasundar R. (eds) Information Systems Security, ICISS 2019, Hyderabad, India, December 16-20, 2019, LNCS vol. 11952, pp. 255-275, Springer, Cham
- 2019 Kamal Macwan and Sankita Patel. Privacy Preserving Approach in Dynamic Social Network Data Publishing. In: Heng SH., Lopez J. (eds) Information Security Practice and Experience, ISPEC 2019, November 26-28 2019, Kualalumpur, Malaysia, LNCS vol. 11879, Springer, Cham
- 2019 Unnati Shah, Sankita Patel and Devesh Jinwala, An Ontological Approach to Specify Conflicts among Non-Functional Requirements. Proceedings of 2nd International Conference on Geoinformatics and Data Analysis, ICGDA 2019, March 15-17, 2019, Prague Czech Republic, pp. 145-149, ACM
- 2019 Shivangi Shukla and Sankita Patel, Context-Aware Approach to Enhance Service Utility for Location Privacy in Internet of Things. In: Singh M., Gupta P., Tyagi V., Flusser J., ren T., Kashyap R. (eds) Advances in Computing and Data Sciences. ICACDS 2019, April 12-13, 2019, Ghazibad, India, CCIS vol. 1046, pp. 529-542. Springer, Singapore
- 2018 Unnati Shah, Sankita Patel and Devesh Jinwala, Constructing a Knowledge-based Quality Attributes Relationship Matrix to Identify Conflicts in Non-Functional Requirements. In: Proceedings of 1st International Conference on Intelligent Computing, ICIC 2018, October 25-27, 2018, Bangalore, India

2018

- Kamalkumar Macwan and Sankita Patel. Node Differential Privacy in Social Graph Degree Publishing, *Procedia Computer Science*, vol. 143, pp. 786-793, Elsevier, January 2018. (SCOPUS)
- 2017 Kamal Macwan and Sankita Patel, Mutual Friend Attack Prevention in Social Network Data Publishing. In: Sk Subidh Ali, Jean-Luc Danger, Thomas Eisenbarth (eds), 7th International Conference on Security, Privacy, and Applied Cryptography Engineering, SPACE 2017, December 13-17, 2017, Goa, India, LNCS vol. 10662, pp. 210-225, Springer, Cham
- 2017 Slesha Sanghvi and Sankita Patel. Investigating Privacy Preserving Technique for Genome Data. In: Patel Z., Gupta S. (eds), 1st EAI International Conference of Future Internet Technologies and Trends, ICFITT 2017, Aug 31-Sep 2 2017, Surat, India, LNICT vol. 220, pp. 106-115, Springer, Berlin, Heidelberg
- 2016 Unnati Shah, Sankita Patel and Devesh Jinwala. Specification of Non-Functional Requirements: A Hybrid Approach. Joint Proceedings REFSQ-2016 Workshops, Doctoral Symposium, Research Method Track, and Poster Track co-located with the 22nd International Conference on Requirements Engineering: Foundation for Software Quality (REFSQ 2016), Gothenburg, Sweden, March 14, 2016. CEUR Workshop Proceedings 1564, CEUR-WS.org
- 2014 Greeshma Sarath, Devesh Jinwala and Sankita Patel. A Survey on Elliptic Curve Digital Signature Algorithm and its Variants. In: Proceedings of Second International Conference of Database and Data Mining, DBDM 2014, Dubai, UAE, Arpil 4-5, 2014
- 2013 Sankita Patel, Viren Patel and Devesh Jinwala. Privacy Preserving Distributed K-Means clustering in Malicious model using Zero Knowledge Proof. In: C. Hota and P.K. Srimani (eds) International Conference on Distributed Computing and Internet Technology, ICDCIT 2013, January 9-12, 2013, Bhubaneswar, India, LNCS vol. 7753, pp. 420-431, Springer, Berlin, Heidelberg
- 2012 Sankita Patel, Sweta Garasia and Devesh Jinwala. An efficient approach for Privacy Preserving Distributed K-Means clustering based on Shamir's Secret Sharing scheme. In: Theo Dimitrakos, Rajat Moona, Dhiren Patel, D. Harrison McKnight (eds) 6th IFIP WG 11.11 International conference of Trust Management, IFIPTM 2012, May 21-25 2012, Surat, India, Springer, Berlin, Heidelberg
- 2012 Rutvij Jhaveri, Sankita Patel and Devesh Jinwala. DOS Attacks in Mobile Ad-hoc Networks: A Survey. In: Proceedings of Second International Conference of Advanced Computing and Communication Technologies, Rohtak, Haryana, January 2012, pp. 535-541, Conference Publishing Services(CPS)
- 2012 Rutvij Jhaveri, Sankita Patel and Devesh Jinwala. A Novel Approach for Grayhole and Black-hole Attacks in Mobile Ad-hoc Networks, In: Proceedings of Second International Conference of Advanced Computing and Communication Technologies, Rohtak, Haryana, January 2012, pp. 556-560, Conference Publishing Services(CPS)
- 2012 Rutvij Jhaveri, Sankita Patel and Devesh Jinwala. A Robust Solution for Grayhole Attack in AODV Based MANETs. In: Das V.V., Stephen J.(eds) Third International Conference on Advances in Communication, Network, and Computing, CNC 2012, Feb 24-25 2012, Chennai, In-

dia, LNICT vol. 108, Springer, Berlin, Heidelberg

- 2011 Vivek Patel, Sankita Patel and Devesh Jinwala. A Novel Approach for Light Weight User Authentication Scheme in Wireless Sensor Network. In: Proceedings of 10th International Conference on Security and Management, SAM 2011, July 18-21, 2011, USA, vol. 2, pp.749-755
- 2010 Kiran Bhagiya and Sankita Patel. Implementing Mobile Phone As a Multi-Purpose Controller using 3D Sensor Technology. In: Proceedings of 3rd IEEE International Conference on Computer Science and Information Technology, ICCSIT 2010, July 9-11, 2010, Chengdu, China
- 2010 Dharmishtha Chaudhari and Sankita Patel. Investigating Caching Strategies in Personal Communication Services. In: Proceedings of 3rd IEEE International Conference on Computer Science and Information Technology, ICCSIT 2010, July 9-11, 2010, Chengdu, China
- 2009 Devesh Jinwala, Dhiren Patel, Sankita Patel and K S Dasgupta. Replay Protection at the Link layer Security in Wireless Sensor Networks. In: Proceedings of the 2009 World Congress on Computer Science and Information Engineering, CSIE 2009, Los Angeles, USA, pp. 160-165, IEEE Computer Society
- 2009 Sankita Patel and Vivaksha Jariwala. Security in Wireless Sensor Network. In: Proceedings of the International conference on Sensor, Security, Software and Intelligent Systems, ISSSIS 2009, Coimbatore, India

#### CONFERENCES(NATIONAL)

- 2016 Unnati Shah, Sankita Patel, and Devesh Jinwala. Formal Specification of Functional and Non-Functional Requirements: A Hybrid Approach. Paper accepted in PhD Symposium for Poster Presentation at Xerox Research Center India, XRCI Open'16 – January 21-22, 2016
- 2015 Sankita Patel and Devesh Jinwala. Approaches for Privacy Preserving Distributed Clustering in Semi-honest and Malicious model. Presented Poster at 9th Inter-Research-Institute Student Seminar in Computer Science (co-located with the ACM India Annual event 2015), IRISS 2015, February 5 2015, Goa, India
- 2014 Ankit Chouhan, Sankita Patel and D C Jinwala. Comparative Analysis of Elliptic Curve Cryptography based Algorithms to Implement Privacy Preserving Clustering through Secure Multiparty Computation. Security and Privacy Symposium, SPS 2014, 20-22 February, 2014, IIT Kanpur, India
- 2014 Urvi Narang, Sankita Patel and D C Jinwala. Privacy Preserving Clustering using Fully Homomorphic Encryption. Security and Privacy Symposium, SPS 2014, 20-22 February, 2014, IIT Kanpur, India (*Won the Best Poster Award*)
- 2013 Sankita Patel and Devesh Jinwala. Privacy Preserving Distributed Clustering in Malicious model. Presented Poster at Security and Privacy Symposium, SPS 2013, IIT Kanpur, India

- 2012 Sankita Patel, Viren Patel and Devesh Jinwala. Distributed Privacy Preserving K-Means clustering in Malicious Model using Zero Knowledge Proof. Proceedings of the 12th National Workshop on Cryptology, Cryptology Research Society of India and Vellore Institute of Technology, Vellore, India, pp. 77-90, 2012
- 2007 Sankita Patel and Neelam Surti. Ant colony optimization for routing in mobile adhoc networks: A review. National conference on Trends in Advance Computing, NCTIAC 2007, Datta Meghe college of Engg., Navi Mumbai, India, 2007
- 2007 Neelam Surti and Sankita Patel. Virtual router: A router for communication between virtual LANs. National conference on Trends in Advance Computing, NCTIAC 2007, Datta Meghe college of Engg., Navi Mumbai, India, 2007

#### BOOK CHAPTERS

- 2022 Kanchan Kumari, Shubham Pandey, Pritesh Kethele, Sankita Patel, Shweta Shah and Upena Dalal. Design of LinkIt ONE-Based IoT System with Middleware Architecture for Healthcare Monitoring. In IoT Applications for Healthcare Systems. EAI/Springer Innovations in Communication and Computing. Springer, Cham, April 2022. [https://doi.org/10.1007/978-3-030-91096-9\\_3](https://doi.org/10.1007/978-3-030-91096-9_3)
- 2022 Hiral S. Trivedi and Sankita J. Patel. Security and Privacy Aspects in the Internet of Things (IoT) and Cyber-Physical Systems (CPS). In: Handbook of Research of Internet of Things and Cyber-Physical Systems, Apple Academic Press, pp.453-490, Taylor and Francis Group, eBook ISBN 9781003277323, June 2022
- 2021 Sankita Patel, Ujjwal Kumar, Hrishabh Sharma, Amruta Mulay and Rishabh Kumar. Leveraging Blockchain Technology for Decentralized Domain Name Broker Service. Blockchain for Information Security and Privacy. Auerbach Publications, Taylor and Francis Group, 2021, eBook ISBN 9781003129486
- 2021 Kamalkumar Macwan and Sankita Patel. Privacy Preserving Approaches for Online Social Network Data Publishing. Digital Transformation and Challenges to Data Security and Privacy. IGI Global, February 2021. pp. 119-132
- 2021 Sankita Patel, Ujjwal Kumar, Hrishabh Sharma, Amruta Mulay and Rishabh Kumar. Leveraging Blockchain Technology for Decentralized Domain Name Broker Service. Blockchain for Information Security and Privacy. Auerbach Publications, Taylor & Francis Group, 2021, eBook ISBN 9781003129486

#### Books Edited

- 2024 Sankita Patel, Bhavesh Gohil, Naveen Kumar Chaudhari, S S Iyengar (eds), Security, Privacy and Digital Forensics. Lecture Notes in Electrical Engineering, vol 1075, Springer, 2024.
- 2022 Udai Pratap Rao, Sankita J Patel, Pethuru Raj, Andrea Visconti, (eds), Security, Privacy and Data Analytics. Lecture Notes in Electrical Engineering, vol 848, Springer, Singapore, First online in



April 2022.

## **Ph.D. Students Guided**

- 2023-24 “Design and Analysis of Secure Data Collection, Processing and Storage Methods in Distributed IoT Systems” by Trivedi Hiral Shashank (DS17CO002). Date of viva-voce: 9th April, 2024
- 2023-24 “Design and Analysis of Secure Multi-factor Authentication and Data Sharing Approaches in Cloud Architecture.” by Shivangi Shukla (D18CO002). Date of viva-voce: 10th January, 2024
- 2022-23 “Privacy-Preserving Approaches for Insider Attack Prevention in Collaborative Social Network Data Publishing Setup” by Kadhiwala Bintu Bharatkumar (DS15CO003). Date of viva-voce: 11th May, 2023
- 2021-22 “Analysis and Investigation of Novel Approaches for Specification and Identification on Conflicts in Non-Functional Requirements” by Shah Unnati Sunilkumar (D15CO003). Date of viva-voce: 18th May, 2022
- 2020-21 “Privacy Preserving Data Publishing Approaches for Online Social Networks” by Macwan Kalkumar Ramanlal (D15CO002). Date of viva-voce: 4th November, 2020

## **M.Tech. Dissertations Guided**

- 2022-23 “Implementation of Unified Dashboard for Driver Validation” by Bhavin Chudasama (P21CO004)
- 2022-23 “User Profiling based on Mobile Phone Forensic” by Hiral Bambhaniya (P21CO009)
- 2021-22 “Device Fingerprinting Based Multifactor Authentication in LoRa Device” by Mansi Singhal (P20CO005)
- 2021-22 “A Novel and Provably Secure Mutual Authentication Protocol For Cloud Environment Using Elliptic Curve Cryptography and Fuzzy Verifier” by Khushboo A. Patel (P20CO004)
- 2019-20 “Remote Service Tools for CathLab System” by Jyoti Garg (P18CO003)
- 2019-20 “Scalable Test Framework for Multiple TPCs of Neural Network Processors” by Shivani Makwana (P18CO005)
- 2018-19 “Assisted Global Navigation Satellite System” by Parthkumar Rathod (P17CO003)
- 2018-19 “Angular 2 with REST Integration In Existing Ericsson Next Generation Voucher Server” by Sharma Himanshu Jagdish (P17CO006)
- 2017-18

- “A Novel Context-Aware Adaptive Model for Location Privacy in Internet of Things” by Shivangi Shukla (P16CO002)
- 2017-18 “Development of Simulation Model of Memory Management Unit and Simulation Automation Framework for an Intel IP” by Bhavna Verma(P16CO014)
- 2016-17 “Clinical Data Analytics” by Shah Nishtha Jayeshkumar (P15CO001)
- 2016-17 “Optimizing and Enhancing the Test Automation Solution of Intel Mobile Platforms” by Don-tula Amrutha Lakshmi (P15CO005)
- 2016-17 “Automatic and Dynamic Verification of Intel Display Pipeline Power Saving Technology” by Ami N. Golwala (P15CO012)
- 2015-16 “Investigating Privacy Preserving Technique for Genome Data by Slesha S. Sanghvi (P14CO001)
- “Andriod Display Validation” by Durgesh Waghmare (P14CO016)
- 2014-15 “Memory Power Management for INTEL Xeon-D servers” by Ashutosh H. Kulkarni (P13CO007)
- 2014-15 “Investigating Approaches for Privacy Preserving Traffic Surveillance” by Patel Kushal D. (P13CO017)
- 2013-14 “An Application of Fully Homomorphic Encryption Scheme to Privacy Preserving Multi-party Clustering” by Urvi Raj Narang (P12CO007)
- 2013-14 “A Tabular Approach To Analyze Classes From Use-cases Using X-Text” by Diganta Bordoloi (P12CO014)
- 2013-14 “An Elliptic Curve Cryptography Based Approach to Privacy Preserving Distributed K-Means Clustering” by Ankit Chouhan (P12CO016)
- 2012-13 “Privacy Preserving Distributed Clustering in Semi-honest Model using Elliptic Curve Cryptog-raphy” by Dharmen Punjani (P11CO033)
- 2012-13 “Privacy Preserving Distributed K-Means Clustering in Malicious Adversary Model Using Veri-fiable Secret Sharing Scheme” by Sonar Mitali (P11CO030)
- 2011-12 “Improving Route Discovery Process in AODV to Prevent Blackhole and Grayhole Attacks in MANETs” by Rutivj H. Jhaveri (R10CO952)
- 2011-12 “Distributed Privacy Preserving K-Means Clustering in Malicious Model Using Zero Knowledge Proof” by Viren J Patel (P10CO970)
- 2011-12 “Investigating Approaches for Detecting Similarity in Metamorphic Malware Using Frequency of API Function Calls” by Jaydip R Mahida (P10CO973)
- 2010-11

- “Design and Implementation of Lightweight User Authentication Scheme in Wireless Sensor Network” by Vivek Patel (Po9CO952)
- 2010-11 “Design and Implementation of Privacy Preserving Clustering Algorithm Based on Shamir’s Secret Sharing Scheme” by Sweta Garasia (Po9CO970)
- 2010-11 “Design and Implementation of Reconstruction Based Approach for Privacy Preserving Association Rule Mining” by Pushpak Raval (Po9CO974)
- 2009-10 “Regional Movement Based Hierarchical Location Scheme For Personal Communication Services” by Dharmishtha Chaudhari (Po8CO971)
- 2009-10 “Implementing Mobile Phone As a Multi-purpose Controller Using 3D Sensor Technology” by Kiran Bhagiya (Po8CO954)
- 2009-10 “Combination of Signature based and Behaviour based Malware Detection” by Paritosh Golder (Po8CO979)

### **Training Programs/Workshops/Conferences/Seminars Conducted**

- 2023 Organizing Secretary of the Second International Conference on Security, Privacy and Digital Forensics (ICISPD 2023) during December 15-16, 2023 jointly organized by National Forensic Sciences University, Gandhinagar, NIT, Goa and SVNIT, Surat hosted by National Forensic Sciences University, Gandhinagar
- 2022 Organizing Secretary of the Second International Conference on Security, Privacy and Data Analytics (ISPDA 2022) during December 13, 2022 to December 15, 2022, Department of Computer Science and Engineering, SVNIT, Surat
- 2022 Organizing Secretary of the International Conference on Security, Privacy and Digital Forensics (ICISPD 2022) during December 2-3, 2022 jointly organized by National Forensic Sciences University, Gandhinagar, BITS Pilani, Goa and SVNIT, Surat hosted by National Forensic Sciences University, Goa
- 2021 Organizing Secretary of the International Conference on Security, Privacy and Data Analytics (ISPDA 2021) during December 13, 2021 to December 15, 2021, Department of Computer Science and Engineering, SVNIT, Surat
- 2021 Joint Coordinator of the AICTE Training and Learning (ATAL) Sponsored Five Days Online Faculty Development Program on Cyber Threat Intelligence and Digital Forensics (CTIDF-2021) during July 19, 2021 to July 23, 2021
- 2021 Joint Coordinator of the TEQIP-III Sponsored Five Days Online Short Term Training Program on Cyber Threat Intelligence and Digital Forensics (CIDF-2021) during Mar 1, 2021 to Mar 5, 2021
- 2021

- Jointly conducted a Webinar on Crypto for IoT Devices and Cryptanalysis. Speaker: Dr. Andrea Visconti, Computer Science Department, University of Milan, Italy, on 26th February 2021
- 2020 Joint Coordinator of the TEQIP-III Sponsored Five Days Online Short Term Training Program on Cyber Security and Penetration Testing (CSPT-2020) during Dec 28, 2020 to Jan 1, 2021
- 2019 Joint Coordinator of the ISEA-II Sponsored One Day Workshop on Cyber Crime and Digital Forensics (CCDF-2019) on Nov 23, 2019
- 2019 Joint Coordinator of the TEQIP-III Sponsored Five- Days STTP on Blockchain Technology (BCT 2019) during Jun 3-7 2019
- 2019 Joint Coordinator of the TEQIP-III Sponsored Two- Days Workshop on Outcome based Education and NBA Accreditation during Mar 15-16, 2019
- 2018 ISEAP - II Sponsored Five-Days FDP on Research Topics in Information Security and Privacy during May 19-23, 2018
- 2016 Joint Coordinator of the TEQIP-II Sponsored Five-Days STTP on Software Requirements and Specifications during May 9-13, 2016
- 2015 Joint Coordinator of the TEQIP-II Sponsored Five-Days STTP on Privacy Preserving Data Mining May 25-29, 2015
- 2014 Joint Coordinator of DeITY, Ministry of Communications and Information Technology, Govt of India, sponsored Short Term Training Program on Wireless Sensor Networks:Secure Data Aggregation and Related Issue during May 14-18, 2014
- 2013 Joint Coordinator of the TEQIP-II Sponsored Five-Days STTP on Wireless Sensor Networks:Secure Data Aggregation and Related Issue during May 15-19, 2013
- 2013 Joint Coordinator of the TEQIP-II Sponsored Five-Days STTP on Wireless Sensor Networks and Security Issues during May 20-24, 2013
- 2010 Joint Coordinator of the Short Term Training Program on Analysis and Design of algorithms at SVNIT, Surat during Jan 4-14, 2010

### **Expert Talks Delivered**

- 2024 Talk on Security and Trust UAV Applications at Bootcamp 8.0 on Drone Applications (18-22 June 2024) sponsored by MeiTy organized by SVNIT Surat, 19th June, 2024.
- 2024 Talk on Security and Trust UAV Applications at Bootcamp 5.0 on Drone Applications: Precision Farming (11-15 March 2024) sponsored by MeiTy organized by Bhagwan Mahavir Institute of Technology and SVNIT Surat, at Bhagwan Mahavir Institute of Technology, Surat 12th March,

- 2024.
- 2023 Talk on CyberSecurity Guidelines and Standards at E-Governance Awareness Workshop organized by C-DAC, Pune and SQTC Directorate, Ministry of Electronics and Information Technology, Govt. of India, at Ahmedabad, Gujarat, 10th July, 2023.
- 2023 Talk on Ensuring Secure Drone Applications at Bootcamp 2.0 on Drone Application organized by SVNIT, Surat, sponsored by Meity, Government of India, 29th June, 2023.
- 2022 Talk on Biometric Authentication: Security Issues and Potential Fixes at 5th Edition of International Symposium on New Trends in Signal Processing (NeTSiP) organized by IEEE Gujarat Section, SCET, Surat, 6th September, 2022.
- 2021 Key note talk on “Privacy Issues and Countermeasures in Data Publishing: A Case Study of Online Social Media” at the National Conference on Emerging vistas of Computer Science & IT in 21st century, Parul University, 18th December 2021.
- 2021 Talk on Privacy Issues and Countermeasures in Data Publishing: A Case Study of Online Social Media at the National Workshop on “Privacy and Security in Cyber Physical Systems (PSCPS 2021) held during 23rd November, 2021 to 25th November, 2021, SVNIT, Surat.
- 2021 Talk on “Machine Learning for Cyber Security” at GUJCOST and DST sponsored Short Term Training Program on Advanced trends in AI, ML and Deep Learning at Parul University, Gujarat, 17th September, 2021.
- 2021 Talk on “Collaborative Threat Intelligence Data Sharing and Processing” at ATAL FDP on Cyber Threat Intelligence and Digital Forensics (CTIDF-2021) on July 20, 2021 at the Department of Computer Science and Engineering, SVNIT, Surat
- 2020 Talk on “Cyber Attacks and Covid-19” for Creating mass awareness on Cyber Frauds durin Covid-19, All India Radio Surat Station, 9th May, 2020
- 2019 Acted as an expert for Live session on “Cyber Security Awareness” on All India Radio Surat Station for Creating mass awareness on Cyber Frauds, 11th September 2019
- 2019 Acted as an expert for Live Phone-in Program “Hello Kanoon” on the subject “Cyber Frauds, Security and Privacy”, DoorDarshan channel DD Girnar, 9th September 2019
- 2019 Talk on “Applications of Data Structures” at Department of Computer Engineering and Information Technology, CHARUSAT College, Changa, Gujarat, 29th March 2019
- 2018 Talk on “Research Scope in Information Security” at C G Patel Institute of Technology, Maliba Campus, UKA Tarsadia University, Bardoli, Gujarat, 7th May 2018
- 2017 Talk on “Digital Signatures” at Swami Atmanand Saraswati Institute of Technology, Surat, September 2017

- 2017 Talk on “Security Issues and Challenges in Social Networking” at National Level Seminar on Emerging Trends, Security Issues and Challenges in IoT, Big Data and Social Networking at Vado-dara Institute of Engineering and Research, Vadodara, July 2017
- 2017 Talk on “Research Trends in Privacy Preserving Data Mining” at Computer Engg Dept, SCET, Surat, March 2017
- 2017 Keynote Talk on “Secure Multiparty Computation and Privacy Preserving Data Mining” at 2nd National Conference on Computer and Communication Research, February 2017
- 2017 Talk on “Privacy Preserving Data Mining” at STTP on Data Mining Applications with Big Data Analytics at CGPIT Bardoli, January 2017
- 2016 Talk on “Privacy Preserving Techniques and applications in Wireless Sensor Networks” at STTP on Wireless Sensor Networks and Applications at BVM Engg. College VV Nagar, December 2016
- 2016 Talk on “Mathematical Background of Cryptography” at FDP on Cyber Security at GTU, Gu-jarat, October 2016
- 2016 Talk on “Privacy Preserving Techniques in Big Data Analytics” at STTP on Big Data Analytics, SVNIT, Surat, June 2016
- 2016 Talk on “Privacy Preserving Techniques in Mobile Computing” at STTP on Wireless Networks and Mobile Computing, May 2016
- 2016 Talk on “Structured System Analysis and Design” at STTP on Software Requirement Specifica-tion at SVNIT Surat, May 2016
- 2016 Talk on “Logic and Algebraic Specification-I & II” at STTP on Software Requirement Specifica-tion at SVNIT Surat, May 2016
- 2016 Talk on “Current Trends in Information Security and Privacy” at MCA Department, SCET Surat, January 2016
- 2015 Talk on “Cryptography based Approach to Privacy Preserving Data Mining” at TEQIP-II Spon-sored Five-Days STTP on Privacy Preserving Data Mining at SVNIT, May 2015
- 2015 Talk on “Elliptic Curve Cryptography based Approach to Privacy Preserving Data Mining” at TEQIP-II Sponsored Five-Days STTP on Privacy Preserving Data Mining at SVNIT, May 2015
- 2015 Talk on “Secret Sharing based Approach to Privacy Preserving Data Mining” at TEQIP-II Spon-sored Five-Days STTP on Privacy Preserving Data Mining at SVNIT, May 2015
- 2014 Talk on “Secret Sharing based approach for Privacy homomorphism in Wireless Sensor Networks” at C G Patel Institute of Technology, Maliba Campus, UKA Tarsadia University, Bardoli, Gujarat, January 2014

- 2013 Talk on “Security Issues in WSNs, Attacks, Countering Approaches” at TEQIP-II Sponsored Five-Days STTP on Wireless Sensor Networks: Secure Data Aggregation and Related Issues, at SVNIT, July 2013
- 2013 Talk on “An Elliptic Curve Cryptography Primer I & II” ( two sessions of 1.5 hrs each) at TEQIP-II Sponsored Five-Days STTP on Wireless Sensor Networks: Secure Data Aggregation and Related Issues, at SVNIT, July 2013
- Secret Sharing Based Approach for Privacy Homomorphism TEQIP-II Sponsored Five-Days STTP on Wireless Sensor Networks: Secure Data Aggregation and Related Issues, at SVNIT, July 2013
- 2013 Talk on “Algorithms for Secure Data Aggregation in WSNs” at TEQIP-II Sponsored Five-Days STTP on Wireless Sensor Networks & Security Issues, SVNIT, May 2013
- 2013 Talk on “Security Issues in WSNs, Attack Models, DoS Attacks, Countering Approaches for In-network Processing” at TEQIP-II Sponsored Five-Days STTP on Wireless Sensor Networks & Security Issues, SVNIT, May 2013
- 2010 Talk on “Divide and conquer design’ at STTP on Analysis and design of algorithms at SVNIT, January 2010
- 2010 Talk on “String matching algorithms” at STTP on Analysis and design of algorithms at SVNIT, January 2010
- 2009 Talk on “Object oriented programming concepts in data structures” at STTP on Advances in Data Structures at SVNIT, December 2009
- 2009 Talk on “Introduction to Graph data structure” at STTP on Advances in Data Structures at SVNIT, December 2009

## **Courses Attended**

- 2024 Presented paper at the COMSNET 2024 during January 5-7, 2024 held Bangalore, India.
- 2022 Presented paper at the IEEE India Council Conference (INDICON) during 24-26 December, 2022 held at Cochin University of Science and Technology, Kochi, Kerala.
- 2022 Attended a course on “Computer Hacking Forensic Investigator v10”, organized by EC Council Accredited Training Center, Cyint Technologies, 28th May to 2nd June, 2022.
- 2022 Attended a National Webinar on “Cyber Security for Women”, organized by ISEA Project Phase II by Ministry of Electronics Information Technology (MeitY), Government of India, 8th March, 2022.
- 2021

- Attended and Presented paper titled Privacy Preserving Scalable Authentication Protocol with Partially Trusted Third Party for Distributed Internet-of-Things at the 18th International Conference on Security and Cryptography (SECRYPT), Italy, July 6-8 2021 (Online mode).
- 2020 Attended TEQIP-KIT sponsored Short Term Course on “Cyber Security and Modern Cryptography” from 9th to 13th November, 2020, IIT Kharagpur
- 2020 Attended Webinar on “STI Connect Forum at University for R&D Proposals on State priority areas of S&T”, conducted by GUJCOST, Government of Gujarat on 7th July, 2020
- 2020 Attended (Online) Five Days FDP on “Cyber Security” conducted by National Institute of Technology, Warangal, AICTE Training And Learning (ATAL) Academy, May 18-22, 2020
- 2020 Attended (Online) Four Weeks Course on “Cybersecurity and the Internet of Things” at Coursera (Kennesaw State University), May 2020
- 2020 Attended (Online) Twelve Weeks Course on “Privacy and Security in Online Social Media” at NPTEL, Feb-Apr 2020
- 2019 Attended Two Days Workshop on “Outcome based Education and NBA Accreditation” at SVNIT Surat, March 15-16, 2019
- 2019 Attended Third Workshop on “Blockchain Technology and its Applications” at IIT Bombay, Feb 4-5, 2019
- 2018 Attended “IEEE MiniPOCO- 4th Conference Organizers Workshop” at Visakhapattanam, Andhra Pradesh, May 20, 2018
- 2018 Attended One Day International workshop on “Smart contracts with Blockchain and IoT” at VJTI Mumbai, Feb 26, 2018
- 2017 Attended one day workshop on “Python” at IIT Bombay, August 26, 2017
- 2017 Attended “ISEC 2017 - Innovations In Software Engineering Conference” at LNMIIT, Jaipur, Feb 5-7, 2017
- 2015 Attended two days “ACM India Annual Event 2015” at BITS Pilani, Goa campus, Goa, Feb 5-6, 2015
- 2014 Presented a paper at “Second International Conference of Database and Data Mining (DBDM 2014)”, Dubai, UAE, April 4-5, 2014
- 2014 Presented Poster at “2nd Security and Privacy Symposium” at Indian Institute of Technology, Kanpur, Feb 20-22, 2014
- 2013 Attended workshop on “Objective and Outcome Based Education” under TEQIP-II, S.V. National Inst. Of Tech., Surat, Dec 21-22, 2013



- 2013 Attended “Pedagogy Training Programme: Developing Teachers for Effective Teaching & Research” under TEQIP-II, S.V. National Inst. Of Tech.,Surat, Jun 3-7, 2013
- 2013 Attended “Security and Privacy Symposium” at IIT, Kanpur, Feb 28-Mar 2, 2013
- 2012 Attended workshop on “Trust Management in ICT Through ICT” by IIT Bombay. Host : SVNIT, Surat, Feb 6-10, 2012
- 2010 Attended workshop on “Effective teaching/learning of computer programming Through ICT” by IIT Bombay. Host : SVNIT, Surat, Jun 28-July 10, 2010
- 2010 Attended FDP on “Data Mining: Techniques and Applications” at S.V. National Inst. Of Tech.,Surat, Feb 8-12, 2010
- 2009 Attended FDP on “Computer Architecture” at S.V. National Inst. Of Tech.,Surat, Dec 21-25, 2009
- 2009 Attended FDP on “Advances in Data Structure” at S.V. National Inst. Of Tech.,Surat, Dec 14-18, 2009
- 2009 Attended FDP on “Cyber Security” at S.V. National Inst. Of Tech.,Surat, Jan 19-23, 2009
- 2008 Attended FDP on “Computer Vision and Image Processing” at S.V. National Inst. Of Tech.,Surat, July 7-11, 2008
- 2007 Attended FDP on “Emerging Trends in Network Security” at Sarvajanic College of Engineering and Tech., Surat, Dec 24-28, 2007
- 2006 Attended FDP on “Trends in Distributed System” at Sarvajanic College of Engineering and Tech., Surat. Jun 26-30, 2006
- 2005 Attended FDP on “Artificial Intelligence: A modern Approach” at Sarvajanic College of Engineering and Tech., Surat, May 2-7, 2005

## Teaching

### COURSES TAUGHT AT B.TECH

Discrete Mathematics  
 Social Network Analysis  
 Data Structures and Algorithms  
 Information Security and Cryptography  
 Cryptography  
 Software Engineering  
 Network and Systems Security  
 Fundamentals of Computer and Programming

## COURSES TAUGHT AT M.TECH.

Mathematical Foundations of Computer Science  
Introduction to Computer Security  
Public Key Infrastructure and Trust Management

## Service to the profession

### PH.D THESIS REVIEWED

- 2022 Thesis reviewed and External Examiner for conducting Ph.D. Viva voce examination of Mr. Ashwini Kumar Jha (169999913002) of Gujarat Technological University, Chandkheda, Gujarat, India on the title "PERFORMANCE OPTIMIZATION AND EVALUATION OF COMPUTATION OFFLOADING IN FOG ARCHITECTURE" on 15th October, 2022.
- 2020 Thesis reviewed and External Examiner for conducting Ph.D. Viva voce examination of Mr. Rathod Ajaysinh Devendrasinh (15TE703001) of Faculty of Technology & Engineering (Computer Engineering) of C. U. Shah University, Wadhwan City, India on the title "Collaborative TTP Free Cryptographic Approaches for Privacy Preservation in Location Based Services" on 3rd December 2020.

### SESSION CHAIR

- 2021 Acted as Session Chair in Virtual International Symposium on "Aspiring Safer and Healthier Workspaces (SASHW 2021)" held during October 22-23, 2021 organized by Internal Complaints Committee of SVNIT, Surat.
- 2021 Acted as Session Chair on 7th July 2021 for Session "Network Security Protocols" at the 18th International Conference on Security and Cryptography (SECRYPT), Italy, July 6-8 2021.

### PAPER REVIEWER

Technical Program Committee Member of ASONAM 2023 and 2024  
Paper reviewer at CONCURRENCY AND COMPUTATION: PRACTICE AND EXPERIENCE journal of Wiley, 1 paper reviewed in 2023.  
Paper reviewer at SADHANA (Springer), Computing (Springer), Frontiers of Computer Science (Springer), IET Journal of Intelligent Transport System.  
Paper reviewer at frontiers in Computer Science (Springer) (1 paper reviewed on March 1, 2023)