# Dr. FIROS A

**Associate Professor (Level 13A) | Department of Computer Science & Engineering**

Rajiv Gandhi University (A Central University), Rono Hills, Doimukh, Arunachal Pradesh – 791112, India

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SCOPUS ID: 57201896411 | Google Scholar | Linkedin | Wos

Personal · Qualifications · Experience · Publications · Books & Chapters · Patents · Guidance · Projects · Curriculum · Conferences · Administration · Memberships · Programmes · Vision · Declaration

## PERSONAL INFORMATION

| | | | |
|---|---|---|---|
| **Full Name** | FIROS A | **Date of Birth** | 12 May 1980 |
| **Father's Name** | Abdul Salam | **Mother's Name** | Fathima Beevi |
| **Nationality** | Indian | **Marital Status** | Married |
| **Permanent Address** | Kundoorkonam, Maruthikunnu PO, Navaikulam, Trivandrum, Kerala – 695603 | | |

## ACADEMIC QUALIFICATIONS

| Degree | Subject | University / Institution | Year |
|---|---|---|---|
| M.E. | Computer Science & Engg. | Anna University, Chennai | 2007 |
| MBA | Human Resource Management | Tamil Nadu University, Chennai | 2013 |
| Ph.D. | Computer Science & Engg. | Rajiv Gandhi University (A Central University), Arunachal Pradesh | 2020 |
| Ph.D. | Management | North Eastern Regional Institute of Science and Technology (NERIST), Arunachal Pradesh | ONGOING |

**Ph.D. (CSE) Thesis:** "Design and Development of a Semantic-Based Low Bit Rate Speech Coding Framework for Emotional Speech | **Registration:** 09 Mar 2016 | **Submission:** 18 Mar 2019 | **Award:** 18 Feb 2020 | **Supervisor:** Prof. Utpal Bhattacharjee

## TEACHING & PROFESSIONAL EXPERIENCE

| Designation | Institution | Period | Duration | Level |
|---|---|---|---|---|
| Associate Professor | Dept. of CSE, Rajiv Gandhi University (Central Univ.), Itanagar | Feb 2023 – Feb 2025 | 2 yrs 0 m | 13A |
| Assistant Professor | Dept. of CSE, Rajiv Gandhi University (Central Univ.), Itanagar | Feb 2010 – Feb 2023 | 13 years | 12 |
| Lecturer | Dept. of CSE, Vemana Institute of Technology, Bengaluru, Karnataka | Dec 2007 – Feb 2010 | 2 yrs 1 m | 10 |
| Junior Programmer (Industry) | Larsen & Toubro (L&T Electrical & Automation), Mysore — ModBus Protocol Design | May 2002 – Feb 2003 | 9 months 15 d | — |

**Subjects taught:** Introduction to Programming with C, Advanced Operating Systems, Computer Systems, Web Technology, Advanced Computer Architecture, Data Science, Web Analysis and Development, Systems and Network Administration, Java Programming, Computer Architecture, Data Analytics with Python, Data pre-processing and feature engineering, Research Methodology, Research And Publication Ethics, Machine Learning Concepts With Python, Data Science , Basics of Office Automation Tools, Operating System, Advanced Computer Networks, Big Data Analytics and Visualization

Languages of Instruction: English, Hindi, Malayalam, Tamil

Mode of Assessment: Self-assessment, Student Feedback, Peer Review, Expert from other departments

## RESEARCH PUBLICATIONS (SELECTED PAPERS)

### A. SCOPUS/SCI/Peer-Reviewed Journal Articles

1. **Knots and knot-hyperpaths in hypergraphs.** Mathematics. 2022;10(3):424. ISSN: 2227-7390. *Available from:* DOI | MDPI | Scopus | Web of Science | Clarivate Master Journal List
2. **Empirical analysis for improving food quality using artificial intelligence technology for enhancing healthcare sector.** J Food Qual. 2022;2022:1447326. 13 p. ISSN: 1745-4557. *Available from:* DOI | Wiley Online Library | Scopus
3. **Parameterized fuzzy measures decision making model based system to minimise path loss problem in wireless communication systems.** NeuroQuantology. 2022;20(5):3647–3651. ISSN: 1303-5150. *Available from:* DOI | NeuroQuantology Issue | NeuroQuantology Article | Scopus
4. **Investigation of mechanical behavior and microstructure analysis of AA7075/SiC/B4C-based aluminium hybrid composites.** Adv Mater Sci Eng. 2022;2022:2411848. p. 1–10. ISSN: 1687-8442. *Available from:* DOI | Wiley Online Library | Scopus | Web of Science
5. **Intelligent fake node identification on wireless sensor network to avoid security threats using enhanced AODV protocol.** AIP Conf Proc. 2022;2432:060011. p. 060011-1–060011-10. ISSN: 1551-7616. *Available from:* DOI | AIP Scitation | Scopus
6. **Intuitionistic fuzzy Hamacher generalized Shapley Choquet integral operators based decision-making model for feature extraction and automatic material classification in mining area using satellite data.** Adv Mater Sci Eng. 2022;2022:2890996. 15 p. ISSN: 1687-8442. *Available from:* DOI | Wiley Online Library | Web of Science | Scopus
7. **IoT based data collection and data analytics decision making for precision farming.** Internet of things and machine learning in agriculture. 2021;1:195–209. ISBN: 978-1-68507-192-9. *Available from:* DOI | Nova Publishers
8. **Class consciousness and socio-economical conflict: a cogitation of Katherine Mansfield's "The Doll's House".** Turk J Comput Math Educ. 2021;12(2):1135–1139. ISSN: 1309-4653. *Available from:* TURCOMAT | DOI | Scopus
9. **Efficient healthcare assisting cloud storage strategy using fog prioritization logic based on edge devices.** Turk J Comput Math Educ. 2021;12(2):1059–1066. ISSN: 1309-4653. *Available from:* TURCOMAT | DOI | Scopus
10. **Estimation of the X/$\gamma$-ray shielding properties of different glass system using Monte Carlo simulation.** Turk J Comput Math Educ. 2021;12(2):1117–1122. ISSN: 1309-4653. *Available from:* DOI | TURCOMAT | Scopus
11. **Investigation of key success factors for open innovation and firm performance in Indian IT and ITeS industry: a systematic literature review.** Turk J Comput Math Educ. 2021;12(9):37–46. ISSN: 1309-4653. *Available from:* DOI | TURCOMAT | Scopus
12. **Loss reduced network using sensorless Bldc motor.** 2021 5th International Conference on Intelligent Computing and Control Systems (ICICCS); 2021. p. 479–483. ISBN: 978-1-6654-1272-8. *Available from:* DOI | IEEE Xplore | Scopus
13. **Numerical analysis of the impact of magnetohydrodynamics on steady boundary layer slip flow.** Turk Online J Qual Inq. 2021 Jun;12(3):580–590. ISSN: 1309-6591. *Available from:* TOJQI | DOI | Scopus
14. **Online survey for students about impact of Covid19 in college education.** Turk Online J Qual Inq. 2021 Jun;12(3):542–549. ISSN: 1309-6591. *Available from:* TOJQI | DOI | Scopus
15. **Unmanned six-wheels bogie rover with robotic arm for surveillance and fixing objects.** Turk J Comput Math Educ. 2021;12(10):2066–2075. ISSN: 1309-4653. *Available from:* TURCOMAT | DOI | Scopus
16. **Space vector Pwm based matrix converter with Wecs using Dfig.** Int J Aquat Sci. 2021;12(2):2404–2414. ISSN: 2008-8019. *Available from:* International Journal of Aquatic Science
17. **Permanent magnet synchronous generator based wind energy conversion system with power management system using V/F technique.** Int J Aquat Sci. 2021;12(2):2372–2382. ISSN: 2008-8019. *Available from:* International Journal of Aquatic Science PDF
18. **A survey on plant disease detection methods for building a robust plant disease detection system.** In: Marriwala N, Tripathi CC, Jain S, Mathapathi S, editors. Soft computing for intelligent systems. Singapore: Springer; 2021. p. 195–209. ISBN: 978-981-16-1048-6. *Available from:* DOI | Springer Link
19. **On bipolar fuzzy sub semi modules with respects to bipolar fuzzy connectives.** J Adv Res Dyn Control Syst. 2020;12(2):35–45. ISSN: 1943-023X. *Available from:* DOI | JARDCS | Scopus
20. **An approach towards rank and nullity of algebraic expressions of graphs.** J Adv Res Dyn Control

Syst. 2020;12(2):14–23. ISSN: 1943-023X. *Available from:* DOI | JARDCS | Scopus

21. **Intelligible semantic level speech compression algorithm by preserving emotional content.** 2017 International Conference on Energy, Communication, Data Analytics and Soft Computing (ICECDS); 2017. p. 3041–3044. ISBN: 978-1-5386-1887-5. *Available from:* DOI | IEEE Xplore | Scopus
22. **Efficient distribution of virtual machines using Honey bee windowing in cloud computing.** 2017 International Conference on Computing, Communication and Automation (ICCCA); 2017. p. 1292–1295. ISBN: 978-1-5090-6471-7. *Available from:* DOI | IEEE Xplore | Scopus
23. **Text independent gender identification in noisy environmental conditions.** 2017 International Conference on Computing, Communication and Automation (ICCCA); 2017. p. 63–66. ISBN: 978-1-5090-6471-7. *Available from:* DOI | IEEE Xplore | Scopus
24. **A novel speaker identification system using feed forward neural networks.** 2017 International Conference on Energy, Communication, Data Analytics and Soft Computing (ICECDS); 2017. p. 3045–3047. ISBN: 978-1-5386-1887-5. *Available from:* DOI | IEEE Xplore | Scopus
25. **Acoustic representation of and Adi vowels.** Int J Comput Sci Issues. 2013 Mar;10(2 No 1):519–522. ISSN: 1694-0814, 1694-0784. *Available from:* IJCSI
26. **Evaluation of cluster approach for detecting black hole attacks in wireless ad hoc networks using deep learning.** IEEE; 2022. p. 821–825. ISBN: 978-1-6654-3789-9. *Available from:* DOI | IEEE Xplore | Scopus
27. **Machine learning application for medicine distribution management system.** Int J Food Nutr Sci. 2022;11(1):2323–2330. ISSN: 2320-7876. *Available from:* DOI | IJFANS | UGC-CARE
28. **A wearable medicines recognition system using deep learning for people with visual impairment.** Int J Food Nutr Sci. 2022;11(S1):2340–2348. ISSN: 2320-7876. *Available from:* DOI | IJFANS PDF | UGC-CARE
29. **Fuzzy logic implementation of internet of things and smart material management in the sector of automotive management.** Int J Food Nutr Sci. 2022;11(8):404–414. ISSN: 2320-7876. *Available from:* DOI | IJFANS PDF | UGC-CARE
30. **Integration of DL on multi-carrier non-orthogonal multiple access system with simultaneous wireless information and power transfer.** IEEE; 2022. p. 640–643. ISSN: 2767-7362. *Available from:* DOI | IEEE Xplore | Scopus
31. **Fault detection in power transmission lines using AI model.** 2023 IEEE International Conference on Integrated Circuits and Communication Systems (ICICACS); 2023. p. 1–6. ISBN: 979-8-3503-9846-5. *Available from:* IEEE Xplore | DOI | Scopus
32. **A detailed review and study of implementation of security system design for machine learning-based software systems: issues and challenges.** 2023 3rd International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE); 2023. p. 809–813. ISBN: 979-8-3503-9926-4. *Available from:* IEEE Xplore | DOI | Scopus
33. **Machine learning integration in communication system for efficient selection of signals.** 2023 3rd International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE); 2023. p. 1529–1533. ISBN: 979-8-3503-9926-4. *Available from:* IEEE Xplore | DOI | Scopus
34. **Modular deep learning for advertisement image memorability: object and text bias.** J Integr Sci Technol. 2023;12(2):740. p. 1–6. ISSN: 2321-4635. *Available from:* JIST | Scopus
35. **Effect of environmental factors on dynamic viscosity of zirconia and silica nanofluids: experimental insights and theoretical predictions.** NanoWorld J. 2023;9(S3):324–331. ISSN: 2379-1101. *Available from:* DOI | NanoWorld Journal | Scopus
36. **DETR-DC5 approaches for improved spatial object detection in satellite imagery.** 2023 Intelligent Computing and Control for Engineering and Business Systems (ICCEBS); 2024. p. 1–5. ISBN: 979-8-3503-9458-0. *Available from:* DOI | IEEE Xplore | Scopus
37. **SARIMA techniques for predictive resource provisioning in cloud environments.** 2023 Intelligent Computing and Control for Engineering and Business Systems (ICCEBS); 2023. p. 1–5. ISBN: 979-8-3503-9458-0. *Available from:* DOI | IEEE Xplore | Scopus
38. **Geospatial object detection in hyperspectral imagery using spectral-spatial networks.** 2023 Intelligent Computing and Control for Engineering and Business Systems (ICCEBS); 2023. p. 1–5. ISBN: 979-8-3503-9458-0. *Available from:* DOI | IEEE Xplore | Scopus
39. **Enhancing IoT security with self-adaptive blockchain-based intrusion detection system.** 2023 Intelligent Computing and Control for Engineering and Business Systems (ICCEBS); 2023. p. 1–5. ISBN: 979-8-3503-9458-0. *Available from:* DOI | IEEE Xplore | Scopus
40. **Cybersecurity dynamics and legal frameworks: shaping the future in North Eastern India.** Int J Cult Stud Soc Sci. 2024 Jul–Dec;20(2 No 1). ISSN: 2347-4777. *Available from:* UGC-CARE
41. **Mechanical, water absorption, efflorescence, soundness and morphological analysis of hybrid brick**

**composites.** Matéria (Rio J.). 2024;29(3):1–9. ISSN: 1517-7076. *Available from:* SciELO | DOI | Clarivate Master Journal List | Web of Science

42. **Anomaly detection in firewall access control list using automata theory.** Sci Technol J. 2024 Jan;12(1):130–137. ISSN: 2321-3388. *Available from:* Mizoram University | UGC-CARE
43. **Developing AI-based pollution source identification models: a deep learning approach using satellite data in industrial regions.** Int J Environ Sci. 2025;11(23s):962–969. ISSN: 2229-7359, 0976-4402. *Available from:* DOI | IJES | Scopus
44. **Leveraging fuzzy artificial intelligence as a technique to find relative desirability in social network.** Adv Comput. 2025;125. ISSN: 0065-2458. *Available from:* DOI | ScienceDirect | Scopus
45. **Biodegradable biofilms for in-vitro propagation of vegetative crop species.** Musik in Bayern. 2025;90(11):71–83. ISSN: 0937-583X. *Available from:* DOI | PDF | Clarivate Master Journal List
46. **Few-shot transfer for speech enhancement using SEGAN with stability guardrails.** Arch Acoust. 2026;52:1–44. ISSN: 0137-5075, 2300-262X. *Available from:* DOI | Archives of Acoustics | Scopus | Clarivate Master Journal List
47. **Preference-leveled fuzzy AI for evaluating desirability in smart healthcare systems.** 2025 Asia Meeting on Environment and Electrical Engineering (EEE-AM); 2025. p. 1–6. ISBN: 979-8-3315-6774-3. *Available from:* DOI | IEEE Xplore | Scopus
48. **Hybrid feature selection using Random Forest with DenseNet121 for enhanced pneumonia detection.** 2025 Asia Meeting on Environment and Electrical Engineering (EEE-AM); 2025. p. 1–6. ISBN: 979-8-3315-6774-3. *Available from:* DOI | IEEE Xplore | Scopus
49. **Development and optimization of meloxicam-loaded microspheres for enhanced drug delivery and therapeutic efficacy.** Int J Drug Deliv Technol. 2026;16(23s):354–357. ISSN: 0975-4415. *Available from:* DOI | IJDDT | Scopus
50. **Unmasking polymorphic malware and its detection techniques in Internet of Things (IoT): a comprehensive review.** Int J Comput Netw Appl. 2026;13(5):1124–1158. *Available from:* DOI | IJCNA | Scopus
51. **Experimental evaluation of CNN, vision transformer, and hybrid CNN–transformer architectures for paediatric pneumonia detection using chest X-ray images.** Int J Sci Res Comput Sci Eng. 2026 Oct;14(5):8–21. ISSN: 2320-7639. *Available from:* IJSRCSE | DOI

(+ 14 additional Journal publications, 2010–)

## BOOKS & BOOK CHAPTERS

### A. Books Authored (8 Books)

1. **Python data analytics: a machine learning approach.** India: Notion Press Media Pvt Ltd; 2022. 348 p. ISBN: 979-8888331453. *Available from:* Amazon [National]
2. **Data analytics with Python: lecture notes and laboratory manual.** Chișinău, Moldova: Eliva Press; 2022. 389 p. ISBN: 978-1636485959. *Available from:* Amazon [International]
3. **Tracing attackers with trust-based deterministic packet marking: a hacker's guide.** Beau Bassin, Mauritius: International Book Market Service Ltd; 2020. 72 p. ISBN: 978-6138945765. *Available from:* Amazon [International]
4. **Systems and network administration (SNA)__A handbook for beginners.** India: Notion Press Media Pvt Ltd; 2020. 214 p. ISBN: 9781639041480. *Available from:* Amazon [National]
5. **e-Enabled performance management system for officers: an officer's guide.** Scholars' Press; 2020. 68 p. ISBN: 978-6138946380. *Available from:* Amazon [International]
6. **Fundamentals of natural language processing lecture notes.** India: Notion Press Media Pvt Ltd; 2020. 170 p. ISBN: 9781639049738. *Available from:* Amazon [National]
7. **Understanding discrete-time signal processing: lecture notes.** India: Notion Press Media Pvt Ltd; 2020. 214 p. ISBN: 9781639200191. *Available from:* Amazon [National]
8. **Office automation tools: a guide.** India: Notion Press Media Pvt Ltd; 2020 [published 2023 Oct 18]. 150 p. ISBN: 979-8891860322. *Available from:* Amazon [National]

### B. Chapters in Edited Books (43 Chapters — Selected)

9. **Parameterized fuzzy measures decision making model based on preference leveled evaluation.** In: Chaudhary K, Alam M, editors. Big data analytics - digital marketing and decision-making. 1st ed. Routledge (CRC Taylor and Francis); 2022. ISBN: 9781032310305, 978-1-032-31044-2, 978-1-003-30776-1. *Available from:* Routledge | DOI | Taylor & Francis Book | Taylor & Francis Chapter

10. **IoT-based automated decision making with data analytics in agriculture to maximize production.** In: Kannadhasan S, editor. Intelligent technologies for automated electronic systems. Bentham Science Publisher; 2024. p. 113–124. ISBN: 9789815179514. *Available from:* DOI | EurekaSelect
11. **A fuzzy based high performance decision making model for signal detection in smart antenna through preference leveled evaluation functions.** In: Kannan Dasan S, editor. Intelligent technologies for research and engineering. Bentham Science; 2024. p. 1–19. ISBN: 978-981-5196-26-9. *Available from:* Bentham Science | DOI
12. **An empirical analysis in understanding the transformative effect of application of internet of things in business and society.** In: Sobti R, Garg R, editors. Computer science, engineering and emerging technologies: proceedings of ICCS. Taylor and Francis CRC Proceedings; 2024. p. 245–251. ISBN: 9781032521992. *Available from:* Routledge | DOI
13. **Development of future wireless communication-based IoT system.** In: Sobti R, Garg R, editors. Computer science, engineering and emerging technologies: proceedings of ICCS. Taylor and Francis CRC Proceedings; 2024. p. 38–48. ISBN: 9781032521992. *Available from:* Routledge | DOI
14. **Examining cyber security curricular frameworks for business schools using artificial intelligence.** In: Sobti R, Garg R, editors. Computer science, engineering and emerging technologies: proceedings of ICCS. Taylor and Francis CRC Proceedings; 2023. p. 177–1781. ISBN: 9781032521992. *Available from:* Routledge | DOI
15. **Use of blockchain technologies against cyber security threats and increase IT industry security.** In: Sobti R, Garg R, editors. Computer science, engineering and emerging technologies: proceedings of ICCS. Taylor and Francis CRC Proceedings; 2024. p. 170–176. ISBN: 9781032521992. *Available from:* Routledge | DOI | Taylor & Francis Chapter
16. **A detailed investigation of artificial intelligence in economic growth and development of emerging economies.** In: Sobti R, Garg R, editors. Computer science, engineering and emerging technologies: proceedings of ICCS. Taylor and Francis CRC Proceedings; 2023. p. 225–231. ISBN: 9781032521992. *Available from:* Routledge | DOI
17. **Approach based on machine learning to predict people's intention to use mobile learning platforms.** In: Sobti R, Garg R, editors. Computer science, engineering and emerging technologies: proceedings of ICCS. Taylor and Francis CRC Proceedings; 2023. p. 483–489. ISBN: 9781032521992. *Available from:* Routledge | DOI
18. **Empirical analysis of machine learning (Ml) for big data and its applications using CNN.** In: Sobti R, Garg R, editors. Computer science, engineering and emerging technologies: proceedings of ICCS. Taylor and Francis CRC Proceedings; 2023. p. 483–489. ISBN: 9781032521992. *Available from:* Routledge | DOI
19. **Knots and knot-hyperpaths in hypergraphs.** In: Cristea I, Bordbar H, editors. Algebraic structures and graph theory. MDPI; 2023. ISBN: 978-3-0365-8440-9, 978-3-0365-8441-6. *Available from:* DOI | MDPI
20. **Semantic based emotional voice coding using feed forward artificial neural network for smart home devices.** In: Singh SP, Solanki A, editors. Modelling of virtual worlds using the internet of things. Taylor and Francis CRC Proceedings; 2024. p. 113–131. ISBN: 978-1-003-48018-1. *Available from:* DOI
21. **AI generative models for the fashion industry.** In: Kumar R, et al., editors. The pioneering applications of generative AI. IGI Global; 2024. p. 106–120. ISBN: 9798369332788. *Available from:* DOI
22. **Fuzzy logic and bio-inspired ant colony algorithm based technique to find relative desirability in IoT based healthcare system.** In: Kumar A, Saini HK, Dubey AK, Díaz VG, editors. Bio-inspired data-driven distributed energy in robotics and enabling technologies. 1st ed. Routledge; 2024. p. 182–202. ISBN: 9781032640631. *Available from:* Routledge | DOI
23. **Fuzzy artificial intelligence as a technique to find relative desirability for fake review detection.** In: Dutta S, Rocha Á, Dutta PK, Bhattacharya P, Singh R, editors. Advances in data analytics for influencer marketing: an interdisciplinary approach. Cham: Springer; 2024. ISBN: 978-3-031-65726-9. *Available from:* DOI | Springer Link
24. **Ethical considerations in using fuzzy artificial intelligence for detecting fake reviews.** In: Bhattacharya P, Hassan A, Liu H, Bhushan B, editors. Ethical dimensions of AI development. IGI Global; 2024. p. 283–302. ISBN: 9798369341476. *Available from:* DOI | IGI Global
25. **Fuzzy artificial intelligence as a technique to find relative desirability for automated insurance premium assignment.** In: Trivedi S, Nallakaruppan MK, Balusamy B, Sivakumar NR, editors. Artificial intelligence and actuarial science applications and case studies from finance and insurance. Routledge; 2024. p. 283–302. ISBN: 9781032751337. *Available from:* DOI
26. **Fuzzy AI for evaluating relative desirability in autonomous vehicle navigation.** In: Khalid S, et al., editors. Hybrid electric vehicles and distributed renewable energy conversion: control and vibration analysis. IGI Global; 2025. p. 289–308. ISBN: 9798369357972. *Available from:* DOI
27. **A model for understanding emotion in online learning using fuzzy logic.** In: Dutta PK, Gupta S,

Kashyap S, Gehlot A, Karmakar R, Bhattacharya P, editors. Emotional intelligence in the digital era concepts frameworks and applications. Taylor & Francis Routledge; 2025. p. 289–308. ISBN: 9781032703695. *Available from:* Routledge | DOI

28. **Preference-leveled evaluation functions in fuzzy AI systems for assessing cell abnormalities in healthcare IoT environments.** In: Bhattacharyya S, Platoš J, Dhar S, Mondal NK, Zelinka I, Banerjee JS, Das A, editors. Data-driven environmental intelligence. 1st ed. CRC Press; 2025. ISBN: 9781032900070. *Available from:* Routledge | DOI
29. **Improving healthcare IoT with fuzzy AI: assessing desirability using preference leveled evaluation functions.** In: Kumar D, Kumar S, editors. VLSI, microwave and wireless technologies. ICVMWT 2024. Singapore: Springer; 2026. ISBN: 978-981-95-2584-3. *Available from:* DOI | Springer Link
30. **Using AI and fuzzy logic for consumer behavior analysis in metaverse business.** In: Saini HK, Mahajan RA, Le DN, editors. Next-generation data-driven business 4.0 using the internet of things, blockchain, and interconnected devices. 1st ed. Taylor & Francis CRC Press; 2025. ISBN: 9781003568988. *Available from:* DOI
31. **Enhancing supply chain management in industry 5.0 with fuzzy artificial intelligence.** In: Aqil S, Lahby M, editors. Advanced metaheuristics for scheduling in distributed manufacturing systems. IGI Global Scientific Publishing; 2026. p. 99–120. ISBN: 9798337331362. *Available from:* DOI
32. **Application of fuzzy artificial intelligence as a technique to find the relative desirability of earthquake.** In: Pandey JK, Rai M, Alam E, editors. AI and ML in early warning systems for natural disasters. Bentham Science Publisher; 2025. ISBN: 979-8-89881-138-9. *Available from:* DOI | EurekaSelect
33. **AI-driven fuzzy logic system for consumer behavior analysis in metaverse business.** In: Saini HK, Rani S, Puri V, Jhanjhi NZ, editors. Artificial intelligence powered sustainable development of business 4.0. 1st ed. CRC Press Routledge; 2026. ISBN: 9781032996974. *Available from:* Routledge
34. **Fuzzy AI for smart decision-making in supply chain management: an industry 5.0 perspective.** In: Tarnanidis T, et al., editors. Diversity and inclusion-driven marketing for multicultural marketplaces. IGI Global Scientific Publishing; 2026. p. 171–188. ISBN: 9798337321110. *Available from:* DOI
35. **Blockchain-enabled cybersecure IoT framework powered by fuzzy AI.** In: Challa RK, Kumar Saini H, Kataria A, Rani S, editors. Big data and blockchain in medical computational robotics: transforming eHealth and precision medicine delivery. Cham: Springer; 2026. ISBN: 9783032188700. *Available from:* DOI
36. **Fuzzy AI-driven intelligent agents for intrusion detection in wireless sensor networks: a cybersecurity framework using WSN-DS dataset.** In: Bhattacharyya B, Kundu A, Chintanpalli AK, Fernando X, editors. Modern wireless communication systems and networks design, practice, and implementation. 1st ed. CRC Press Routledge; 2026. ISBN: 9781041112747. *Available from:* Routledge
37. **Utilizing fuzzy AI to find relative desirability of online threats on social media.** In: Kumar M, El Barachi M, Sharma P, Kaushik K, editors. Security, trust, and social impacts of deepfakes. IGI Global; 2027. p. 239–264. ISBN: 9798337382920. *Available from:* DOI | IGI Global
38. **Bipolar fuzzy decision-making model for GeoAI-based risk assessment and environmental monitoring in delta regions.** In: Mahajan S, et al., editors. GeoAI for deltas. Springer; 2026. ISBN: 978-3-032-33132-8. *Available from:* DOI | Springer Link
39. **How compressed is your speech.** In: Rahman S, editor. Recent trends of mathematics. India: EBH Publisher; 2016. ISBN: 978 93 83252 62 6.

(+ 24 additional book chapters in international edited volumes, 2021–2025)

## PATENTS (10 AWARDED)

| # | Patent Title | Reference No. | Scope | Status |
|---|---|---|---|---|
| 1 | Fingerprint Analysis Device with Integrated Digital Microscope | 6356755 | International | Awarded |
| 2 | An IoT Based Real Time Surveillance Device | 6367026 | International | Awarded |
| 3 | AI and ML Based Smart Drone for Emergency Medical Delivery | 417128 | National | Awarded |
| 4 | IoT Based Management and Prediction of Currency Flow through UPI Transaction | 1196409 | International | Awarded |
| 5 | AI and Voice Based Patients Monitoring System | 202041048080 A | National | Awarded |
| 6 | AI-Based Computer Device for Access Control | 6475443 | International | Awarded |
| 7 | AI-Based Breast Cancer Detection Device | 6370002 | International | Awarded |
| 8 | AI-Based Image Recognition Computer Device for Autonomous Vehicle | 6475033 | International | Awarded |
| 9 | An Industrial Device for Pallet Wrapping | 354210-001 | National | Awarded |
| 10 | IoT Enabled Chemical Mixing Device for Agriculture Farm | 410327-001 | International | Awarded |

## RESEARCH GUIDANCE

| Category | Submitted | Awarded |
|---|---|---|
| Ph.D. — Sole Supervision | 2 | 2 |
| M.Tech./MCA Dissertation — Sole Supervision | — | 36 |

Additionally guiding 2 ongoing Ph.D. scholars, 2 M.Tech. students, 3 MCA students. Guided 20+ BCA students in research projects.

## RESEARCH PROJECTS & SPONSORED ACTIVITIES

| Project Title | Funding Agency | Role | Grant | Status |
|---|---|---|---|---|
| Grant for AICTE Short Term Training Program on Big Data Analytics (3 Phases) | AICTE, New Delhi | Sole PI | $<$ 10 Lakhs | Completed |
| Community Radio Service Station — RGUFM 91.2 MHz (establishment) | Rajiv Gandhi University | Sole PI | $>$ 10 Lakhs | Completed |
| Incubation Centre — Atal Community Innovation Centre (ACIC) by Atal Innovation Mission | Atal Innovation Mission | Co-PI | $>$ 10 Lakhs | Ongoing |

## CURRICULUM DESIGN & ICT CONTRIBUTIONS

1. Chairman, Syllabus Committee, RGU Ph.D.(CSE) Coursework, 2020
2. Chairman, Syllabus Committee, Bachelor in Vocational Studies Animation & VFX, RGU, 2019
3. Chairman, Syllabus Committee, MCA Syllabus, RGU, 2015
4. Chairman, Syllabus Committee, RGU BCA Four-Year Programme as per NEP 2020 LOCF (implemented 2023)
5. Chairman, Syllabus Committee, RGU BCA Four-Year Programme as per NAAC recommendation (implemented 2025)
6. Chairman, Syllabus Committee, RGU BCA Four-Year Programme as per AICTE recommendation (implemented 2026)

## CONFERENCE / SEMINAR PRESENTATIONS & INVITED LECTURES (51 TOTAL)

### A. Invited Lectures (Selected)

1. Fuzzy System Models for Computing. Technology Conclave-2026, DST-TEC, Rajiv Gandhi University, 2026. [Invited Lecture]
2. Modern Mathematical Models for Computing. International Conference on Recent Trends in Mathematics and Computing, Jamia Millia Islamia, New Delhi, 2026. [Invited Lecture]

3. Data Science and Beyond. National Conference on Recent Trends in IT, Rajiv Gandhi University, 2015. [Resource Person]
4. Fundamentals of Data Science and Analytics. AICTE-STTP on Big Data Analytics Using Soft Computing Tools (Phase I), RGU, 2021. [Resource Person]
5. Application of Big Data Analytics — Smart Grid to FinTech. AICTE-STTP Big Data Analytics (Phase II), RGU, 2021. [Resource Person]
6. Data Science Vs Fake News. AICTE-STTP Big Data Analytics with AI & ML (Phase III), RGU, 2021. [Resource Person]
7. Gender Sensitization. Nazareth College of Arts and Science, Avadi, Chennai, 2021. [Resource Person]
8. R Basics. National Workshop on R Programming, Dept. of Economics, Jamia Millia Islamia, New Delhi, 2022. [Resource Person]
9. Fuzzy based Decision Making Systems. Winter School on AI-ML & Learning Technologies-2025, DST-TEC, Rajiv Gandhi University, 2025. [Invited Lecture]

### B. Paper Presentations (Selected — International)

1. Hybrid Feature Selection Using Random Forest with DenseNet121 for Pneumonia Detection. 2025 IEEE Asia Meeting on Environment and Electrical Engineering, Hanoi, Vietnam, 2025. [Paper Presented]
2. Preference-Levelled Fuzzy AI for Evaluating Desirability in Smart Healthcare. 2025 IEEE Asia Meeting on Environment and Electrical Engineering, Hanoi, Vietnam, 2025. [Paper Presented]
3. A Hybrid Deep Learning Framework for Text-Based Emotion Detection. 7th DoSCI-2026, IET Lucknow, Univ. of Delhi & Univ. of Calabria, Italy, 2026. [Paper Presented]
4. Intelligible Semantic Level Speech Compression Preserving Emotional Content. ICECDS 2017, SKR Engineering College, Tamil Nadu (IEEE), 2017. [Paper Presented]
5. Text Independent Gender Identification in Noisy Conditions. ICCCA 2017, Galgotias University (IEEE), 2017. [Paper Presented]
6. Efficient Distribution of Virtual Machines Using Honey Bee Windowing. ICCCA 2017, Galgotias University (IEEE), 2017. [Paper Presented]
7. A Novel Speaker Identification System Using Feed Forward Neural Networks. ICECDS 2017, SKR Engineering College (IEEE), 2017. [Paper Presented]
8. A Low Bit Rate Speech Coding Based on Hidden Markov Model. ICNFESMH-2018, Mahratta Chamber of Commerce, Pune, 2018. [Paper Presented]
9. A Survey on Plant Disease Detection for Building a Robust Detection System. 2nd SCIS-2020, IET-UIET, Kurukshetra University, 2020. [Paper Presented]
10. Deep Neutral Network Based Gender Classification Framework. ICCTCHIT'20, K.S.R. College of Engineering, Tamil Nadu, 2020. [Paper Presented]
11. Social Media Chat Behavior Analysis Through Big Data Analytics. SCAC'21, PSNA College of Engineering & Technology, Dindigul, 2021. [Paper Presented]
12. Improving Healthcare IoT with Fuzzy AI — Preference Leveled Evaluation Functions. 2nd International Conference on VLSI and Microwave Technologies, MMMUT Gorakhpur, 2024. [Paper Presented]
13. Unmasking Polymorphic Malware and Its Detection Techniques. 4th ICMCTT-IV 2024, Kristu Jyoti College, Kerala, 2024. [Paper Presented]
14. Hash Based Mechanism for Tracing Multiple Attackers with Deterministic Packet Marking. ICIS-07, DMI College of Engineering, Chennai, 2007. [Paper Presented]
15. Honey Bee Windowing for Virtual Machine Distribution in Cloud Computing. FISAT International Conference, Ernakulam, Kerala, 2014. [Paper Presented]
16. Development of a Fuzzy Logic-Based AI Model for Emotional Understanding in Online Learning Environments, 1st Conference of LGPR Program (January 2025 batch), Lincoln University College, Malaysia, 2025 [Paper Presented]

(+ 36 additional conference presentations at national and international conferences)

## ADMINISTRATIVE & ACADEMIC RESPONSIBILITIES

| Role / Committee | Year(s) |
|---|---|
| Member, IQAC Team, Rajiv Gandhi University | 2019 – present |
| Member, NIRF Team, Rajiv Gandhi University | 2017 – present |
| Member, Advisory Board — Centre for Entrepreneurship, RGU | ongoing |

| Role / Committee | Year(s) |
|---|---|
| Expert Member, RGU-ACIC (Atal Community Innovation Centre) Implementation Committee | 2019 onwards |
| Coordinator, Placement Committee (CSE) | 2019–2022 |
| Convener, CAS Revaluation Committee | 2019 |
| Department (CSE) Coordinator, RGUCET | 2018 |
| Head In-charge (ECE Department) | 2017 |
| Chairman, Anti-Ragging Squad (CSE) | 2016 |
| Chairman, Department Syllabus Review Committee (MCA) | 2015 |
| Coordinator, AICTE Application Process Committee | 2015–2017 |
| Coordinator, AICTE-Sponsored Activities | 2015–2017 |
| Coordinator, Examinations (CSE) | 2016 |
| Coordinator, Certificate Course in Office Automation (CCOA) | 2015 |
| Convener, MCA Admissions (Departmental Selection Committee) | 2015–2017 |
| Convener, M.Tech. Admissions (Departmental Selection Committee) | 2018–2019 |
| Member, ICT Capacity Building Committee, RGU | 2015 |
| Member, Technical Committee (ICT), RGU | ongoing |
| Member, Technology of Access, Equity and Quality (TAEQ) Cell | ongoing |
| Member, Purchase Committee (Scientific Equipment), RGU | 2015–2016, 2018–2019 |
| Member, Spot Purchase (Advisory) Committee, RGU | 2019 |
| Member, Convocation Committee | 2010 onwards |
| Member, Atal Innovation Mission Proposal Submission Committee | ongoing |
| Technical Committee Member, Online Admission (RGUCET) | ongoing |
| Member, RGUCET & RGUMPET Conduction Committee | 2019 onwards |
| Web Coordinator, Department of CSE, Rajiv Gandhi University | ongoing |
| Teacher In-charge, Laboratory Committee (CSE) | ongoing |
| External Examiner (Practical Examinations), Dept. of ECE, RGU | Dec 2018, May 2019, Dec 2019 |
| Organizer/Organizing Secretary, Conferences and Workshops (CSE) | multiple years |

## PROFESSIONAL MEMBERSHIPS & OTHER ACTIVITIES

- Member, Institute of Engineers (India) — Membership No. M-1593573 (from October 2017)
- Senior Member, IEEE — Membership No. 101335191
- Reviewer, Indonesian Journal of Electrical Engineering and Computer Science (Scopus Indexed)

## PROGRAMMES ORGANISED

| # | From | To | Type | Programme | Role | Level |
|---|---|---|---|---|---|---|
| 1. | Apr 29, 2020 | May 3, 2020 | FDP | Five days Faculty development program on Basics of R Programming, jointly organized by IIT Bombay and Department Of Computer Science And Engineering, Rajiv Gandhi University, Doimukh | Convener -Organised | National |
| 2. | Sep 21, 2021 | Oct 2, 2021 | FDP | STTP- Phase I : AICTE sponsored STTP On BIG DATA ANALYTICS USING SOFT COMPUTING TOOLS (FOR DATA ANALYTICS) | Convener -Organised | National |
| 3. | Nov 8, 2021 | Nov 13, 2021 | FDP | STTP- Phase II : AICTE sponsored STTP On BIG DATA ANALYTICS USING SOFT COMPUTING TOOLS (FOR DATA ENGINEERING) | Convener -Organised | National |
| 4. | Nov 29, 2021 | Dec 4, 2021 | FDP | STTP- Phase III : AICTE sponsored STTP On BIG DATA ANALYTICS USING SOFT COMPUTING TOOLS ( WITH AI & ML) | Convener -Organised | National |
| 5. | Jun 19, 2020 | Jun 19, 2020 | Workshops | Workshop on Machine learning and Deep learning using MATLAB, jointly organized by Department Of Mathematics and Department Of Computer Science And Engineering, Rajiv Gandhi University, Doimukh and ELMAX SYSTEMS AND SOLUTIONS, MATHWORKS (MATLAB AND SIMULIN | Convener -Organised | National |
| 6. | Oct 27, 2021 | Oct 28, 2021 | Workshops | TWO- DAY ONLINE WORKSHOP ON RESEARCH AND PUBLICATION ETHICS | Convener -Organised | National |
| 7. | Oct 5, 2021 | Oct 8, 2021 | Workshops | Webinar program on “Cyber Week Celebrations “ | Convener -Organised | National |
| 8. | Nov 2, 2022 | Nov 2, 2022 | Workshops | Awareness program on Cyber Security (as a part of the Cyber Jaagrookta Diwas 2022 celebration) | Convener -Organised | National |

| # | From | To | Type | Programme | Role | Level |
|---|---|---|---|---|---|---|
| 9. | Nov 15, 2025 | Nov 19, 2025 | FDP | Faculty Development Programme on the theme "Artificial Intelligence & Machine Learning" in association with PANTECH SOLUTIONS INDIA PVT LTD, Chennai | Convener -Organised | National |
| 10. | Mar 06, 2025 | Mar 07, 2025 | Seminar | Two-day Seminar on "Role of computational models in problem solving: health, industry and beyond" | Convener -Organised | National |
| 11. | Aug 07, 2024 | Aug 09, 2024 | Seminar | Three Day Seminar on "Computational Models to Assist in Enhancing Agricultural activities and Productivity" In association with AICTE-VIBRANT ADVOCACY FOR ADVANCEMENT AND NURTURING OF INDIAN LANGUAGES INSTITUTION | Convener -Organised | National |
| 12. | 30th October 2025 | 31st October 2025 | Workshop | Two-Day Capacity Building Workshop on Innovation Design & Entrepreneurship | Convener -Organised | National |
| 13. | Sep 2, 2015 | Sep 3, 2015 | Conference | National conference on recent trends in information technology | Convener -Organised | National |

## RESEARCH ROADMAP & VISION STATEMENT

My research is focused on Fuzzy AI, Speech Processing, Machine Learning, Computer Vision, IoT Security, and Cybersecurity. I have published 100+ research articles of which 46 are in Scopus-indexed journals and maintained an annual publication growth of 10–25%. I lead a multidisciplinary research group applying decision-making models across Computer Science, Management, and Engineering domains. My current focus includes publishing in SCI-indexed journals, filing new patents, and expanding the RGU-ACIC incubation ecosystem. For the next five years, I plan to strengthen interdisciplinary collaborative research, secure major government-funded projects (DST, SERB, AICTE), enhance Ph.D. supervision output, and contribute to establishing research infrastructure benefiting the North-East India academic community.

## DECLARATION

I hereby declare that all the information provided in this Curriculum Vitae is true and correct to the best of my knowledge and belief. All documents and certificates pertaining to the qualifications and experience mentioned above are available for verification upon request.

**Place:** RGU **Date:** 23.11.2026

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