SHAFNA V
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WORK EXPERIENCE

Research Experience

January 2021–2026 (5 years)

Research scholar (regular) at the Department of Computer Science and Engineering, National Institute of Technology Calicut, Kozhikode India. URL: https://nitc.ac.in/

Activities: Research on early prediction of ADHD using HRV, activity data and AI techniques, which includes:
- Studied the importance of selecting the right features and identifying significant intervals in activity data, while analyzing their statistical aspects, to achieve an accurate ADHD diagnosis.
- Analyzed the patterns in raw activity data sequences using a TCN-based model to distinguish between ADHD and control group.
- Working on HRV data to enhance ADHD diagnosis.

Teaching assistance

During Ph.D. at NIT Calicut

- HDL-CS2093D, Hardware Laboratory with Dr.SrinivasaT.M
- PDL-CS1092E, Program Design Laboratory with Dr.Lijiya.A (B.Tech II Sem 2023-24)
- OOSL-CS4097D, Object Oriented Systems Laboratory with Dr.Anu Mary Chacko (S5 B.Tech 2024-25)

Industrial Experience

May 2011–May 2013 (2 years)

Junior Programmer
NeST software(P) Ltd (Now Quest Global),Technopark, Trivandrum, Kerala, India.
URL:https://www.quest-global.com/

Activities:

MINTV 1.1 (Medical Imaging and Network Transfer)
- Developed **MINTServer modules** for XML processing and UI components.
- Designed and implemented **MINTAPIs** for storing, retrieving, and transmitting medical metadata.
- Performed **coding, debugging, and documentation** for system enhancements.
- Created and executed **test cases** for system validation.

MDBS (Medical Database System)
- Developed **UI for the test application** and enhanced data base client features.
- Implemented **Save and Load functionality** for medical data from MINTServer to the database.
- Enabled **series-by-series acquisition** of medical studies from the database.
- Conducted **coding, bug-fixing, and test case preparation** to ensure system stability.

EDUCATIONAL CREDENTIALS

Doctorate of Philosophy (Ph.D.)(Computer Science & Engineering,   -9.47 CGPA Course work)   **2021–2026**
National Institute of Technology Calicut, Kozhikode   *Kozhikode, Kerala*

Master of Technology (Computer Science & Engineering,   -9.49 CGPA)   **2017 – 2019**
Thangal Kunju Musaliar College of Engineering Kollam(APJ Abdul Kalam Technological University)   *Kollam, Kerala*

Bachelor of Technology (Computer Science & Engineering,   -8.77 CGPA)   **2014 - 2017**
Thangal Kunju Musaliar College of Engineering Kollam, Kerala University   *Kollam, Kerala*

Diploma (Computer Engineering,   -80.3%)   **2008 - 2011**
Seethi Sahib Memorial Polytechnic College Tirur, Department of Technical Education   *Malappuram, Kerala*

Twelth (Bio-Maths,   -86.16%)   **2006– 2008**
Imbichi Koya Thangal Higher Secondary School Cherukulamba, Kerala Higher Secondary Board   *Malappuram,Kerala*

Tenth(86.8%)   **2005– 2006**
Govt.Girls Higher Secondary School Malappuram, State Board Kerala   *Malappuram,Kerala*

ACADEMIC PROJECTS

- **Post Graduate Project (Major): Values and Count Optimization of IVIM diffusion weighting parameter**

  Intravoxel incoherent motion (IVIM) theory is an advanced method for the Magnetic Resonance Imaging(MRI). To estimate the three IVIM parameters, the MRI signal must be obtain with various diffusion weightings, b. In this work, the optimal 10 b values of the distribution is determined using a novel approach.All implementations were performed using Python.

- **UG Project (Major):   Cancer Prediction by extracting decision rules from imbalanced gene expression**

  Classifying imbalanced gene expression using a weighted gene selection algorithm. Extracted genes form decision rule pairs, integrated into an ensemble learning framework via majority voting. Implemented in Java using Eclipse.

PEER REVIEWD PUBLICATIONS

Google Scholar Profile:
https://scholar.google.com/citations?user=fMq6fSQAAAAJ&hl=en&oi=ao

ORCID Profile:
https://orcid.org/0000-0003-0968-9505

International Journals (SCI indexed, peer reviewed)
1. Shafna,V.,& SD,M.K.(2024).Optimal interval and feature selection inactivity data for detecting attention deficit hyperactivity disorder. *Computers in Biology and Medicine*, *179*, 108909.

Proceedings of International Conferences (peer reviewed)
1. A. S. P, S. V and M. K. S. D, "Intelligent ADHD Detection: Leveraging Knowledge-Enhanced CNNs with Low-Cost Activity Sensor Data," *2025 IEEE Region 10 Symposium (TENSYMP)*, Christchurch, New Zealand, 2025, pp. 1-6, doi: 10.1109/TENSYMP63728.2025.11144941.
2. Shafna,V.,& Kumar,S.M.(2023).An ML Model for Mental Health Monitoring using Facial Emotion Detection and Analyzing Social Media Posts. In *SAC* (pp. 626-628).

3. Shafna, V., Raju, J., John,A., & Ushadevi,A. C. (2020, December). Values and count optimization of IVIM diffusion weighting parameter. In *2020 3rd International Conference on Intelligent Sustainable Systems (ICISS)* (pp.459-464).IEEE.

RESEARCH INTEREST

- Computer Vision
- Big Data Analytics
- Machine Learning
- Artificial Intelligence
- Image processing

WORKSHOPS AND EXPERT TALKS

1. Attended, two days national workshop on "Advances in Graph Algorithms:Theory and Applications(AGATHA) 2024"organized by the Department of Computer Science and Engineering at NIT Calicut on November 28&29, 2024.
2. Attended, one day workshop on "Artificial Intelligence and Cyber Security" organized bytheCentreforInformation Technology, Research and Automation (CITRA), National Institute of Technology Calicut on April 22, 2024 .
3. Attended,an expert talk on "Navigating the path ways of Publishing" at National Institute of Technology Calicut on March 14, 2024.

AWARDS/CERTIFICATES/FELLOWSHIPS AND ACHIEVEMENTS

1. **UGC JRF Fellowship** November 2020
2. Qualified **UGC NET & JRF**
3. Qualified **GATE** in 2017 & 2019
4. Received **Certificate of Reviewing-**Engineering Applications of Artificial Intelligence **(Elsevier)**, [2024]