

Mohd Azhan Umar Kamil

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<https://github.com/azhankamil> | Scholar:
<https://scholar.google.com/citations?user=ckO3IFoAAAAJ&hl=en>

Education

B.Tech. in Computer Engineering

Zakir Husain College of Engineering & Technology, AMU | 2020 – 2024

Cumulative Percentage: 86.83%

Achievements: All India Rank 95 – AMUEEE (2020), GATE CSE 2024 – Top 10% of 120,000 candidates

Research Experience

- An IoT-Based Integration for Monitoring Real-Time Health Vitals and ECG Validation – BiTi '25 IEEE International Conference, Dubai (Accepted, forthcoming in IEEE Xplore)
Link: None
- Deep Learning-Based Efficient Detection of COVID-19 – ICISC 2022, Lecture Notes in Networks and Systems, vol 436. Springer, Singapore
Link: https://doi.org/10.1007/978-981-19-1012-8_24
- Fractional Wavelet Filter for Efficient Image Compression on Raspberry Pi Zero – ICMNWC 2023, IEEE, Tumkur, India
Link: <https://ieeexplore.ieee.org/document/10435988>
- Weather Satellite Tracking with RTL-SDR: NOAA 15 Image Reception and Signal Decoding – ICCR 2024, IEEE, Dubai, UAE
Link: <https://ieeexplore.ieee.org/document/10533107>
- Advancements in Signal Processing: A Comprehensive Review of Discrete Wavelet Transform and Fractional Wavelet Filter Techniques – ICACIC 2023, IEEE, Puducherry, India
Link: <https://ieeexplore.ieee.org/document/10434964>

Projects

- Physiological Sensing with ROS + Raspberry Pi Zero + MLX90614 Sensor
 - Developed a ROS-based system for real-time physiological monitoring using MLX90614.
 - Integrated data publishing and email alerts for abnormal readings.
 - Demonstrated potential of embedded physiological sensing in HRI applications.

- IoT-Based Health Monitoring System
 - Integrated ECG sensor + STM32/ESP32 microcontrollers with Firebase NoSQL.
 - Developed a Flutter app for real-time cardiovascular health tracking.
- NOAA Weather Satellite Signal Decoding
 - Received and processed NOAA 15 satellite images using RTL-SDR + Raspberry Pi.
- Raspberry Pi Blogging Platform (Cloudflare Tunneling)
 - Deployed Node.js + MongoDB blogging platform on Raspberry Pi with secure tunneling.
 - Accessible via rasp.azhankamil.com

Professional Experience

- Engineer Trainee – Cognizant, Bangalore | 8 Months
- Cody: Internal Code Assistant
 - Built an internal AI-powered code assistant to boost developer productivity.
 - Integrated Continue.dev, Azure OpenAI, Ollama, and RAG for contextual code understanding.
- ACI Worldwide Speedpay system
 - Managed high-volume financial transactions, client reconciliation, and issue resolution.
 - Ensured seamless payment processing and system reliability using MSSQL Server, Jira, Kibana.
- Research Internship – APJ Abdul Kalam STEM-ER Centre, AMU & Ohio State University | Nov 2022 – May 2023
- Adapted SincNet for ECG recognition & cardiovascular classification.
- Designed ECG web app using AD8232 sensor + STM32/ESP32.

Technical Skills

Programming: Python, C, C++, JavaScript

AI/ML: TensorFlow, PyTorch, Scikit, OpenCV

Embedded/Robotics: ROS, STM32, ESP32, Raspberry Pi, RTL-SDR

Tools: LATEX, Tableau, Grafana, Firebase, Cloudflare, MSSQL

Achievements

- Sir Syed Mentoring & Assistance Fellowship (2024–25)
- Led Ground Station Development for SSAMUSAT (MoU with ISRO Inspace)
 - News: <https://timesofindia.indiatimes.com/city/agra/amu-to-launch-its-own-nano-satellite/articleshow/104840565.cms>
- Built novel image compression technique (ZM-SPECK) for Raspberry Pi Zero
- Selected for REU Program at APJ Abdul Kalam STEM-ER Centre (AMU & Ohio State University)