DAKSHANYA MADDALA

dakshanya79@gmail.com | +1 216-306-8823 | LinkedIn | GitHub

EDUCATION

Texas A&M Kingsville, Kingsville, Texas — Aug 2023
Doctor of Philosophy, Computer Science

- Relevant Coursework: Cyber Security
- Attained 'Javelina Graduate Scholarship (2023 – 2024)', 'Full-time appointment as a Graduate Research Assistant'.

Texas A&M Kingsville, Kingsville, Texas — May 2023
Master of Science, Computer Science GPA: 4.00

- Relevant Coursework: Artificial Intelligence (AI), Cloud Computing, Network Security, Operating Systems, Analysis of Algorithms, Fundamental Algorithms, Data Structures, Programming Languages, Discrete Mathematics, Database Management Systems.
- Attained 'In-State Scholarship', 'Computer science Graduate Scholarship', 'Dean's Merit Scholarship' for 100% Academic performance (in-terms of GPA)

Jawaharlal Nehru Technological University, Kakinada, India — Sep 2020
Bachelor of Engineering, Electronics & Communication Engineering GPA: 3.80

- Relevant Coursework: Discrete Mathematics, Computer Programming, Data Structures, Network Analysis, Electronic Devices and Circuits, Pulse and Digital Circuits, Linear and Digital IC Applications, Micro Processors and Micro Controllers, Digital Signal Processing, VLSI Design. Principles of Programming Languages.

SKILLS

- **Programming Languages:** Java, J2EE, C#, HTML, CSS, JavaScript, MySQL, Spring Boot, Deep Dive into HTML.
- **Cloud Technologies:** AWS, DevOps, Cloud Computing.
- **Software Tools:** MULTISIM, Xilinx, MATLAB.
- **MS Office:** Word, Excel, Power Point, One Drive, Outlook.
- **Other Tools:** Git, Django, MongoDB, Visual studio 2022, Eclipse IDE, PyCharm, Rhino 3D Application.

EXPERIENCE

Texas A&M Kingsville, Kingsville, Texas — Aug 2023 – Till Date.
Graduate Research Assistant

- As a Graduate Research Assistant, I collaborated closely with Professor Dr. Ammari on diverse research projects within the Electrical Engineering and Computer Science (EECS) department.
- My role involved conducting experiments, collecting data, analyzing results, and contributing to Research proposals. This experience significantly enhanced my research skills and contributed to advancing knowledge, particularly in Wireless Sensor Networks (WSN), Cybersecurity, Networking, and Communication.
- My work in the WSN Lab provided hands-on experience in this critical field, deepening my expertise, and contributing to academic growth.

BSNL - Bharat Sanchar Nigam Limited, Andhra Pradesh, India — May 2018 – Aug 2018
Technical Support Intern

- My internship at BSNL was a comprehensive dive into the world of telecommunications, encompassing core services such as telecommunications, broadband, mobile services, networking, and information technology.
- This hands-on experience provided me with in-depth knowledge of critical components, including Routers, Switches, Modems, Antennas, Transceivers, Fiber optics, Co-Axial cables, servers, Firewalls, and VoIP (Voice over Internet Protocol) phones.
- This practical exposure enriched my understanding and highlighted the real-world significance of these components in shaping global communication systems.

Eurth Techtronic's, Vijayawada, India — April 2017- July 2017
Co-Ordinator in LED Company

- During my internship, I assumed the role of Coordinator and actively contributed to the seamless execution of projects within the Electrical and Electronics Technologies sector, specifically in energy-efficient LED lighting solutions.
- I efficiently allocated resources, facilitated team communication, and closely tracked project progress, ensuring the timely achievement of objectives.
- This experience significantly enhanced my organizational, coordination, and project management skills, all while gaining practical insights into the dynamic world of LED technology.

APITA – Andhra Pradesh Information Technology Academy, Vijayawada, India — Aug 2016 – Oct 2016
3D Animation Workshop

- During my internship, I had the privilege of working extensively with industry-standard tools such as Adobe Photoshop and graphic animation software.
- This hands-on experience allowed me to develop proficiency in graphic design and animation, applying these skills to real-world projects.
- I actively contributed to the creation of visually compelling content, mastering techniques for graphic animation and manipulation using Adobe Photoshop.

- This experience not only refined my creative abilities but also equipped me with practical expertise in graphic design principles and animation production.
- By leveraging these software tools, I played an integral role in enhancing the visual appeal and storytelling aspects of various projects.
- My internship served as a pivotal opportunity to apply my technical skills and creative vision in a professional setting, ultimately contributing to the successful execution of visual projects.

Orange Research Labs, Hyderabad, India May 2019 – June 2019
Team Leader Intern

- Our internship program centered around the creation of a "Smart Tram Vehicle" designed to revolutionize public transportation safety and efficiency.
- Key Elements included: Micro Controller/Processing unit, Sensors, Actuators, Communication Module, Power supply, Human-Machine Interface (HMI), Navigation System, Redundancy and Backup Systems.
- Throughout the program, we designed, developed, and rigorously tested these components to bring the "Smart Tram Vehicle" to life, providing a hands-on experience in cutting-edge transportation technology and automation for safer and more efficient public transit.

PROJECTS

Irregular Honeycomb Network: Revolutionizing *k*-Coverage in Spatial (3D) Wireless Sensor Networks (Python) Aug 2023

- My research project focused on addressing the *k*-coverage issue in Spatial Wireless Sensor Networks (WSNs) by utilizing innovative irregular hexagonal tessellation methods.
- We recommended centralized k-coverage protocols, including *k-llgm*, based on rigorous theoretical evidence. In our investigation of the Connected *k*-Coverage (CC_kP) problem in Spatial WSNs, we harnessed irregular hexagonal tessellation and parallelogram regions within it to optimize sensor deployment, particularly for Field of Interest (FoI) coverage.
- Furthermore, we addressed the critical aspect of network connectivity by establishing a relationship between sensor sensing and communication ranges.
- This approach ensured the Connected *k*-Coverage (CC_k) of the FoI throughout the network's operational lifetime. As a result of our research, we proposed the centralized *k*-coverage protocol, *k*-llgm, backed by the theoretical outcomes and properties unveiled during our study.
- This work contributes significantly to the enhancement of *k*-coverage solutions in Spatial WSNs, offering a deeper understanding of deployment strategies and network efficiency.

On The Irregular Hexagonal Tessellation for connected *k*-coverage in Planar (2D) Wireless Sensor Networks (Python) May 2023

- My research project tackled the issue of *k*-coverage in Planar Wireless Sensor Networks (PWSNs) using irregular hexagonal tessellation methods.
- We recommended centralized *k*-coverage protocols, including *k*-llgm, based on theoretical evidence. In our investigation of the Connected Coverage *k*-Protection (CC_kP) problem in Planar WSNs, we utilized irregular hexagonal tessellation and parallelogram regions within it to optimize sensor deployment for Field of Interest (FoI) coverage.
- Furthermore, we addressed network connectivity by establishing a relationship between sensor sensing and communication ranges, ensuring CC_k of the FoI throughout the network's operational lifetime.
- We proposed the centralized *k*-coverage protocol, *k*-llgm, based on the theoretical outcomes and properties discovered during our research.

My Calculator - Android App with Firebase Integration (Java) July 2022

- The project began with setting up a Firebase account to establish the backend infrastructure.
- In Android Studio, the "My Calculator" app was created and integrated with Firebase using the appropriate SDK dependencies. Firebase Authentication was optionally set up for user management.
- The app's core functionality, a calculator, was implemented along with the user interface. Firebase Realtime Database or Fire store was configured to store data efficiently.
- The app was coded to connect to Firebase, allowing data to be read from and written to the database seamlessly. Testing and debugging were rigorously performed throughout development, and the app was launched for testing within Android Studio.
- Depending on the project's goals, deployment to distribution platforms like the Google Play Store was considered for wider accessibility. In essence, the project involved building a calculator app in Android Studio, connecting it to Firebase for data storage, ensuring proper functionality, and potentially deploying the app for public use.

Agricultural Crop Monitoring System using IOT (Python) Oct 2019

- The Agricultural Crop Monitoring System leverages IoT technology to address the challenge of monitoring crop conditions in remote or unmanned agricultural settings.
- Key components of the system include Node MCU, various sensors (such as DHT for temperature and humidity, LDR for light levels, PIR for motion detection, and CO2 sensors), cloud integration (via platforms like ThingSpeak), and programming in Python.
- The primary objective of this system is to accurately assess soil moisture levels. When the sensors detect that the soil's moisture content has fallen below a specified threshold, the system triggers an automated irrigation process.
- This ensures that crops receive the required amount of water at the right time, mitigating the risk of crop damage due to insufficient moisture.
- By combining sensor data, cloud connectivity, and Python programming, this IoT-based solution offers an intelligent and efficient approach to agricultural crop monitoring and irrigation. It enhances crop yield, conserves water resources, and reduces the need for constant human monitoring and intervention.