

Vinodh Kumar Reddy Kamasani

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Skills

- Programming languages: C, Embedded C, and Fundamentals of Python
- Software Tools: MATLAB, Arduino IDE, PSPICE, OMNeT++, Wireshark packet analyzer, Open-RAN, TinyML, Edge Impulse
- Web Designing: WordPress production and maintenance, Search Engine Optimization (SEO), and Responsive design.
- Systems: Problem-solving and debugging the computer hardware and Operating Systems.
- Software Troubleshooting: Experience with deployment and troubleshooting Operating systems software, including Microsoft Office Suite, Project, Visio, and Visual Studio.

Education

Virginia Tech

Master of Science, Computer Engineering(systems); 3.96/4.0

Coursework: (Advanced) Real-Time Systems, Cellular Communication Systems, Network Architecture and Protocols, Computer Architecture, SS: 5G-Advanced O-RAN and 6G, Compiler Optimizations, Semiconductor Devices, SS: IoT System Design

Blacksburg, Virginia

Jan 2024 – Dec 2025

Jawaharlal Nehru Technological University

Master of Technology, VLSI; 9.75/10.0

Anantapur, India

Aug 2020 - Jul 2022

Anna University

Bachelor of Engineering, Electronics and Communication Engineering; 7.99/10.0

Chennai, India

Aug 2016 – Apr 2020

Work Experience

Worked as a **Technical Assistant (Systems)** at Siddharth Institute of Engineering & Technology from September 2022 to November 2023.

Job Responsibilities:

- ❖ Installing and configuring new system hardware and software, Planning and implementing system security measures
- ❖ Maintenance and upgrade of existing systems
- ❖ Identifying the requirements for new systems and software to meet the organization's changing needs

Internship

FESTO India Private Limited – Intern

Designed and assembled a CNC (Computer Numerical Control) machine powered by pneumatic systems.

Bangalore, India

June 2018 - July 2018

Publications

Dr. R. Premkumar, and Kamasani Vinodh Kumar Reddy “**Design and Implementation of Unmanned ground vehicle for Intrusion Detection**” Compliance Engineering Journal, Vol. 13, Issue 7, 2022, pp. 12-23, IF = 6.1. DOI: 16.10089.CEJ. 2022.V13I7.285311.3985

Projects

Mini Projects:

- IoT System Design:** Designed and implemented embedded IoT applications integrating Wi-Fi, BLE, and LoRaWAN for sensor data acquisition, wireless communication, and cloud connectivity. Collected real-time sensor data and sent it to the cloud using MQTT. Deployed basic TinyML model on device for gesture recognition.
- Dynamic PRB Allocation xApp for 5G Networks:** Developed an xApp in FlexRIC for adaptive PRB allocation based on CQI, enhancing network performance via simulated resource adjustments.

Main Projects:

- UGV for Intrusion Detection:** Designed an unmanned ground vehicle with camera, radar, and IR sensors, using embedded systems to process data and identify security threats. Focused on the NRF24L01, a low-power 2.4 GHz transceiver with long range, low latency, and robust data handling.
- Green 6G Wireless Systems:** Surveyed sustainable frameworks for 6G, emphasizing eco-friendly optimizations to enhance network sustainability.
- Real-Time Scheduling in FreeRTOS:** Implemented RM, DM, and EDF algorithms in FreeRTOS to evaluate CPU utilization and scheduling efficiency, tested via Arduino IDE.
- Application-Specific Reconfiguration of RISC-V BOOM Core:** Optimized the RISC-V BOOM core for application-specific performance improvements across ML, FFT, graph traversal, and encryption workloads by reconfiguring branch predictors, functional units, and cache policies, achieving higher speedup and reduction in branch mispredictions.

Workshops / Activities

Attended workshops on Solar PV Design, Arduino, IoT & Own Cloud with Raspberry Pi, and Smartphone Troubleshooting (2018-2023).

Certifications

Discrete Time Signal Processing (DTSP), an eight-week course conducted by the National Program on Technology Enhanced Learning (NPTEL) functioning under the Government of India.