SHRINIVAS RAJU UMACHAGI

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Education

- **Bapuji Institute of Engineering and Technology** *Davanagere, India.*
  Bachelor of Engineering - Electronics and Communication Engineering; **CGPA: 7.0** *2021 – 2025*
- **Oriental PU College** *Hubli, India.*
  Pre-University - PCMB; **Percentage: 60** *2018 -2020*
- **Basel Mission English Medium High School** *Hubli,India.*
  Karnataka Secondary Education Examination board (KSEEB); **Percentage: 61.60** *2017 - 2018*

Technical Skills

- **Programming Languages**: HTML, CSS, C, C++, Python, Embedded C.
- **Tools**: VSCode, Linux OS, Arduino IDE, Ubuntu, Jupyter Notebook.
- **Coursework**: Digital Electronic Circuits, System Design Architecture, Digital Design using Verilog, Network theory, Analog Electronics, Digital Signal Processing, Network Theory.

Projects

- **Bluetooth Controlled Robot** *Dec- Jan, 2024.*
  A Bluetooth-controlled robot was developed using an Arduino microcontroller and a UART-based Bluetooth module for wireless communication. The microcontroller processes received commands and generates PWM and GPIO control signals to drive the motors, enabling real-time speed and direction control of the robot.
- **Image Processing Based Fire Detection Using Raspberry-Pi** *Nov - Dec, 2023.*
  A real-time fire detection system was developed using a Raspberry Pi and computer vision algorithms to identify flame patterns from live camera input. The system performs frame processing and image analysis to detect fire and can be extended to trigger alerts or safety actuators for enhanced environmental monitoring.
- **Automatic Medicine Reminding using IOT** *May - July, 2024.*
  An IoT-enabled medication reminder system was developed using Arduino and ESP32 for real-time monitoring and control. The system integrates GSM communication, audio output, and mobile app (Blynk) connectivity to generate reminders, send SMS alerts, and enable remote caregiver supervision for improved patient compliance.
- **Optimized 64-bit Radix-16 Booth Multiplier with Reduced Partial Product Array Height** *Feb - May, 2025.*
  Designed and implemented a 64-bit Radix-16 Booth Multiplier in Verilog HDL with a reduced partial product array height to improve speed, area, and power efficiency. The design was simulated and synthesized using Cadence EDA tools, making it suitable for high-performance DSP and VLSI applications.

Internship and Certification

- **Embedded Systems Trainee – Emertxe Information Technologies**
  Currently undergoing hands-on training in Linux systems, Embedded C/C++ programming, Data Structures and Algorithms, PIC microcontroller programming, and sensor interfacing, with a focus on building firmware-level understanding and hardware–software integration for embedded applications.
- **Embedded Systems Intern – AiROBOSOFT:** Gained hands-on experience in Embedded C and IoT technologies by working on real-time embedded projects, involving microcontroller programming, hardware interfacing, and system-level implementation in the embedded domain.
- Completed a hands-on workshop on **Circuit Prototyping** conducted by the Department of ECE, BIET Davangere in association with Altilogic Technologies, gaining practical exposure to electronic circuit design and hardware implementation.
- Earned the **Google AI Essentials certification**, demonstrating a strong foundation in AI and machine learning concepts with practical exposure to applying AI solutions using Google Cloud tools.
- Participated in a hands-on workshop on **8051 Microcontroller and Embedded C** conducted by the Department of ECE, BIET Davangere, gaining practical experience in microcontroller programming and embedded system development.

Achievements

- Secured First place in COGNITION-2K24, a state level project exhibition in BIET, Davangere.
- Participated in the State Level Robo Race Competition at the event Incredia-24, NMAMIT, Mangalore.