Toshal Kumbhar

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SUMMARY

Electronics and Communication Engineering student with expertise in Embedded Systems and AI/ML for Edge Computing. Skilled in Embedded C, C++, and Python, with hands-on experience in STM32, ESP32, and TinyML. Passionate about hardware-software co-design, low-power AI applications, and optimizing embedded systems for real-world impact.

PROJECTS

- TinyML for Embedded AI
- Technologies Used: TensorFlow Lite, Edge Impulse, Python, STM32, ESP32
- - Designed and deployed low-power AI models for real-time data classification on microcontrollers.
- - Optimized TinyML models for high accuracy and low latency in resource-constrained environments.
- - Implemented a sensor-based AI system for detecting patterns and anomalies in IoT devices.
- Impact:
- - Enabled real-time AI-driven decision-making in embedded systems with minimal power consumption.
- SIH Route Rationalization Project
- Technologies Used: Embedded C, ESP32, IoT Sensors, Data Analytics
- - Developed an intelligent traffic optimization system for the Smart India Hackathon (SIH).
- - Integrated IoT sensors and real-time data processing for efficient route planning.
- - Collaborated on data-driven decision-making for traffic management using embedded AI solutions.
- Impact:
- - Contributed to reducing traffic congestion and optimizing transport efficiency.

EDUCATION

Bachelor of Technology (BTech) in Electronics and Communication Engineering

MIT-World Peace University, Pune Expected Graduation: June, 2027

CERTIFICATIONS

- Spoken Tutorial Python (2024)
- Matlab Onramp - MathWorks (2024)
- Signal Processing Onramp - MathWorks (2024)
- TinyML Foundations - Coursera (2024)
- AI for Embedded Systems - EdX (2024)
- AI/ML for Everyone - Edx (2024)
- ChatGPT Prompt Engineering - Coursera (2025)

SKILLS

- Embedded Systems &
- Microcontrollers - STM32, ESP32
- Software & Tools - STM32CubeIDE, Arduino IDE, Keil uVision, MATLAB, Edge Impulse, KiCad, Google Firebase, Google Cloud Shell
- Programming Languages - Embedded
- C, C++, Python (for ML applications)
- AI/ML for Embedded Systems -
- TensorFlow Lite, TinyML

INTERESTS

- VLSI Design & Hardware-Software Co-design - Interested in designing optimized circuits for embedded applications.
- AI/ML for Edge Computing - Passionate about running AI models efficiently on microcontrollers.
- Embedded Systems & IoT - Exploring real-world applications of embedded AI in smart devices.
- Low-Power AI Solutions - Focused on developing power-efficient AI models for wearable and IoT devices.