Ganesh Bhatkar

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PROFESSIONAL SUMMARY

Embedded Systems Engineer with 5+ years experience in embedded firmware development, hardware-software integration, and real-time systems for industrial and medical applications. Currently transitioning to robotics through a self-driven UGV project focusing on modular design, ROS 2 navigation, and Edge-AI for smart cities. Seeking a Master's in Robotics in Japan to deepen expertise in autonomous systems and AI-driven urban mobility.

EDUCATION
Master of Technology in embedded systems   **2023**
Birla institute of technology Pilani, WILP (Work integrated learning program)

Bachelor of Engineering, electronics and telecommunication   **2016**
SSPM's College of Engineering – Kankavli

EXPERIENCE
Embedded software developer   **August 2024 - Current**
Prama Instruments PVT. LTD., Rabale, Navi Mumbai

- Designed and developed embedded firmware for laboratory and medical devices, improving system reliability and functionality.
- Implemented and tested communication protocols (UART, SPI, I2C) to ensure seamless data exchange between hardware components.
- Debugged and optimized embedded software modules, resulting in reduction in system response time and improved device performance.
- Collaborated with cross-functional teams to integrate capacitive touch sensors and contributed to product development cycle design, enhancing overall device capabilities and user experience.

Assistant R&D Engineer   **April 2022 - August 2024**
Deepak and Technic PVT. LTD., Bhandup, Mumbai

- Developed and implemented embedded software solutions for industrial control systems, improving system efficiency and reliability.
- Designed and programmed GUI interfaces for DWIN displays, enhancing user interaction and reducing operational errors.
- Conducted thorough code reviews and hardware integration testing, ensuring robust product performance and reducing post-deployment.
- Supported quality assurance and optimized I/O performance, leading to faster system response times and smoother production workflows.

Embedded Engineer   **August 2019 – March 2022**
Nirvaa Solutions PVT. LTD. , Belapur, Navi Mumbai

- Designed schematics and performed PCB routing for new hardware development, ensuring manufacturability and signal integrity.
- Developed Arduino-based embedded projects to meet specific client requirements, accelerating prototyping and testing phases.
- Conducted thorough hardware testing and debugging to identify faults and improve system stability and performance.
- Collected and processed Modbus device data to develop a Windows-based application, enhancing real-time monitoring and automation control capabilities.
- Developed Modbus and automation controllers, streamlining industrial process control and improving operational efficiency.

Freelance Educator & Robotics Mentor   **January 2017 – July 2019**
Self-Employed

- Delivered Arduino programming and robotics classes to students and hobbyists, enhancing their practical skills and project understanding.
- Provided guidance and mentorship to college students on project development, improving their technical knowledge and project outcomes.
- Assisted learners in troubleshooting and debugging hardware and software issues, fostering hands-on problem-solving abilities.

SKILLS

- Delivered Arduino programming and robotics classes to students and hobbyists, enhancing their practical skills and project understanding
- Programming Languages & Frameworks: Embedded C, Python, Arduino Programming, ROS (Robot Operating System), FreeRTOS
- Microcontrollers & Controllers: AVR (ATmega8, AVR128DA), PIC16F, STM32F103, STM8s003f3p6, ESP8266, Arduino, Raspberry Pi
- Communication Protocols: UART, SPI, I2C, RS232, RS485, Modbus
- Hardware & Electronics: Schematic Design & PCB Routing (Kicad), Hardware Testing, Signal Integrity, Repair & Fault Finding, Sensor & Motor Interfacing (Stepper Motors, Capacitive Touch Sensors)
- Software & Tools: Microchip Studio, ST Visual Studio, STM32CubeIDE, MPLAB X IDE, Keil uVision, Microsoft Visual Studio Code, DWIN GUI Development Windows-based Application Development for Automation.
- Soft Skills & Others: Project Mentorship & Training, Cross-functional Team Collaboration, Debugging & Troubleshooting

CERTIFICATIONS

- **Embedded System & Robotics -** i3indya Technologies – June 2016
- **Diploma in Advanced Embedded system –** Embedded Technosolutions – October 2016
- **Post Graduate Diploma in Industrial automation –** Prolific Systems & Technologies PVT.LTD – November 2018
- **PCB Design with Kicad** – Udemy | Completed
- **ROS2 for Beginners** – Udemy (In Progress) by Edouard Renard

Personal Details

- **Name:** Ganesh Shamsundar Bhatkar
- **Date of Birth:** 3rd April 1995
- **Nationality:** Indian
- **Language:** Marathi, Hindi, English
  English: Proficient (Effective written and spoken communication)
  Japanese: Not yet (learning interest)
- **Email:** gsbhatkar@gmail.com
- **Contact:** +91-8454928405