GAUTAM BIDARI

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EDUCATION

Northeastern University, Boston, MA
Master of Science in Embedded Systems, Conc. in IoT — Sep 2023 - Aug 2025
Coursework: IoT, Connected Devices, Computer Hardware Security, Software Security — GPA: 4.0

Visvesvaraya National Institute of Technology (VNIT), Nagpur, MH, India
Bachelor of Technology in Electronics and Communication Engineering — July 2018 - May 2022
Coursework: Embedded Systems, Operating Systems, Object-Oriented Programming

TECHNICAL SKILLS

Embedded Systems	nRF52840, ESP32, Arduino Uno/Nano, RPi, SPI, I2C, JTAG, BLE, RTOS, Yocto
Networking Protocols	TCP, UDP, IPv4/v6, 802.11, Thread, OSPF, STP, CoAP, MQTT, LoRA
Programming Languages	C/C++, Rust, Python, Java, SQL, Redis, MATLAB
Cloud Computing	Certified Google Cloud Associate Cloud Engineer (Certificate)
Libraries and Frameworks	Git, Make, CMake, OpenCV, Tensorflow, Pandas, Docker

EXPERIENCE

Woods Hole Oceanographic Institute (WHOI), Woods Hole, MA
Embedded Software Engineering Intern — June 2024 - Dec 2024

- Designed, built and field-tested a **low-cost, high-precision optical pH sensor** having 3rd decimal place precision and sampling rate 2x other devices
- Designed, manufactured and assembled prototype PCBs using **KiCad** and JLCPCB
- Wrote **embedded C** firmware libraries for nRF52840 MCU (**ARM Cortex-M4**) following a **test driven development** framework and MISRA C 2012 guidelines
- Developed an interactive **python-based GUI** to control sensor components via **BLE** or Serial interface and plot sensor data in real-time
- Wrote comprehensive unit and component tests using **Unity framework**

Northeastern University, Boston, MA
Teaching Assistant - Data Networking (TELE 5330) — Jan 2024 - Apr 2024

- Responsible for designing and grading assignments, projects, and viva evaluations
- Conducted weekly Networking Lab sessions using **Cisco Packet Tracer** and **Ubuntu Linux**

Deloitte Consulting, India
Java Backend Developer — June 2022 - Aug 2023

- **Awarded** Deloitte Applause Award for end-to-end implementation of core modules supporting 5+ business use cases (0 critical post-deployment defects)
- Built 20+ **REST** endpoints using **Spring Boot Microservices** with 99.9% uptime SLA. Containerized deployment using **Docker** and Google Kubernetes Engine **(GKE)**
- Utilized **Git, Jenkins** and **Jira** for **CI/CD** flows across Dev/QA/Prod and Project Management in an **Agile Framework**

Millennium Semiconductors, India
Embedded Software Engineering Intern — June 2021 - Aug 2021

- Successfully prototyped a wearable, low-cost, bluetooth-enabled patient monitoring system
- **Bare metal** development on nRF52840 MCU using Segger Embedded System IDE w/ JTAG debugger and protocols like **SPI, I2C, BLE**

PROJECTS

Embedded Linux Device Driver Development — Jan 2025 - April 2025

- Designed linux device drivers for sysfs, proc, and ioctl to manipulate RPi 4 **GPIO ports** using **memory mapped IO** and bit manipulation for **PWM control**
- Built custom linux distro using **Yocto and bitbake** to achieve 20% faster operations on embedded devices
- Implemented rust code on RPi 4 to interact with custom GPIO drivers using sysfs, proc and ioctl

Matter-enabled patient monitoring system (Link) — Sep 2024 - Oct 2024

- **Winner** - Silicon Labs Matter Developer Challenge; Featured in SiLabs WorksWith Conference
- Redesigned **Matter over Thread** (IoT connectivity standard) for critical-care environments with 40% lower energy consumption than WiFi through Arduino Nano integration, Thread border routers, and self-healing mesh networks.