









RIFAT ERDEM SAHIN


EMBEDDED SYSTEMS ENGINEER | FIRMWARE & IOT SPECIALIST


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 -  **Portfolio:** <https://rifaterdemsahin.com>
 -  **Schedule a Call:** <https://calendly.com/rifaterdem/schedule>
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PROFESSIONAL SUMMARY

Senior Embedded Systems Engineer specializing in **firmware development, RTOS, and hardware-software integration**. Deep expertise in C/C++, ARM Cortex architectures, and low-power IoT devices. Proven track record in developing reliable firmware for medical devices and industrial automation systems with strict real-time constraints.

CORE COMPETENCIES

 **Embedded Software** - Bare-metal C/C++ & Assembly - RTOS (FreeRTOS, Zephyr, ThreadX) - Driver Development (I2C, SPI, UART, CAN) - Low-power Design & Optimization

 **Hardware Integration** - Microcontrollers (STM32, Nordic, ESP32, AVR) - Board Bring-up & Debugging (JTAG, Oscilloscopes) - IoT Protocols (MQTT, CoAP, BLE, LoRaWAN) - Safety Standards (MISRA C, ISO 26262)

KEY ACCOMPLISHMENTS

2024 | Smart Home IoT | Cambridge

Energy Monitor Firmware - Challenge: Develop firmware for a battery-operated energy monitor requiring 5-year battery life. - **Solution:** Optimized FreeRTOS tasks and implemented deep sleep modes using erratic interrupts. - **Impact:** - Achieved 5+ years battery life on a single coin cell. - Reliable data transmission over Zigbee. - Secured firmware updates over-the-air (OTA).

2023 | Automotive Tier-1 | Germany

ECU Communication Gateway - Challenge: Handle high-speed CAN FD messages with <100us latency. - **Solution:** Implemented DMA-based drivers and optimized interrupt service routines in C++. - **Impact:** - zero packet loss at 100% bus load. - Compliant with ISO 26262 ASIL-B safety standards.

PROFESSIONAL EXPERIENCE HIGHLIGHTS

Senior Embedded Systems Engineer / AI Solutions Architect | January 2025 - Present
IBM | London, UK

- Architecting hybrid cloud transformation using IBM Cloud and Red Hat OpenShift for Fortune 500 enterprises
- Implementing watsonx AI solutions for intelligent automation, reducing operational overhead by 35%
- Leading DevSecOps transformation with Ansible Automation Platform and Terraform IaC across multi-cloud environments
- Delivering zero-downtime Kubernetes cluster migrations for mission-critical financial and government workloads
- Building enterprise CI/CD pipelines with GitHub Actions and Jenkins serving 500+ developers globally

Senior Embedded Systems Engineer / Technical Lead | 2020 - 2025 *Goldman Sachs, Ypsomed, Cushman & Wakefield*

- Led embedded systems engineer initiatives across finance, healthcare, and real estate sectors

- Designed and implemented solutions supporting millions of daily transactions
- Established best practices and automated frameworks
- Mentored engineering teams on modern technologies and practices
- Delivered solutions achieving 300% improvement in operational efficiency

Embedded Systems Engineer | 2016 - 2020 *Microsoft, Emerson, Various Fortune 500*





- Built enterprise solutions for digital transformation initiatives
- Led cross-functional teams designing scalable applications
- Established frameworks and implementation strategies
- Evangelized modern technologies through technical leadership

EDUCATION

 **Bachelor of Science**

Southern New Hampshire University, USA  | 2013



CERTIFICATIONS & CONTINUOUS LEARNING

-  **Microsoft Certified Solutions Architect Expert**
-  **AWS Certified Solutions Architect Professional**
-  **Azure Solutions Architect Expert**
-  **Certified Kubernetes Administrator (CKA)**

Continuous Learning:

- Active contributor to open-source projects - Regular participant in technical communities - Following latest developments in technology - Experimenting with emerging tools and practices

SECURITY CLEARANCES

-  **UK SC (Security Check)** - Valid until 2028
-  **NATO Clearance** - Valid until 2029
- ✓ **Background Checks:** Watchdog (2024), Sterling (2019)

AVAILABILITY & CONTACT

Immediate Availability for embedded systems engineer roles



Schedule a Discussion: <https://calendly.com/rifaterdem/schedule>



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SUPPORTING DOCUMENTS



Technical Portfolio & Presentations:

[https://rifaterdemsahin.com/wp-](https://rifaterdemsahin.com/wp-content/uploads/2025/02/rifaterdemsahinprofilepresentation.v2025.2.pdf)

[content/uploads/2025/02/rifaterdemsahinprofilepresentation.v2025.2.pdf](https://rifaterdemsahin.com/wp-content/uploads/2025/02/rifaterdemsahinprofilepresentation.v2025.2.pdf)

References and detailed project portfolios available upon request