Debasish Mukherjee

Team Lead | Embedded Software Engineer

Phone: +4915510495848

Address: 70178, Stuttgart

Website: https://www.linkedin.com/in/erdebasish/

Email: debasishformasters@gmail.com

- *Software Team Lead with 10+ years of total experience developing embedded software (C/C++, FreeRTOS, ARM Cortex-M).*
- *Proven expertise in eBike platform software design and development, system-level architecture, and technical roadmap execution.*
- *Skilled in embedded middleware, device communication.*
- *Strong cross-functional leadership bridging engineering and business objectives.*

RECENT HIGHLIGHTS

- Reduced **startup load** by **15%** by leading the design and implementation of an inconsistency-handling subsystem.
- Reduced **ROM/FLASH footprint by 25 KB** by generating non-templated, lambda-free optimized C++ code for message bus (middleware) communication.
- Leading a 9-member embedded software team delivering platform features for **next-generation Bike-OS systems**.
- Improved **development predictability and delivery alignment** through cross-team coordination with architects, POs, and multiple feature teams.
- Incorporated **Gen AI** in backlog refinement through custom LLM.

KEY COMPETENCIES

- **Platform** SW Development Expert (Bike platform & system-level services)
- **Architecture** & **Design** Decision **distillation**.
- Hands-On Development in **C and C++** (Series & PoC SW)
- **Technical Roadmap** Planning, Feasibility Analysis and Execution
- Team **Leadership** & **Cross-Functional** Alignment
- **Stakeholder Collaboration:** Proven ability to align architecture with business goals, mentor teams, and deliver future-proof solutions
- Recognized for **bridging technical** and **strategic** perspectives while fostering collaboration and innovation
- Innovation in Development Processes (**AI in Dev**, future-proofing features)

PROFESSIONAL EXPERIENCE

Bosch E-Bike Systems

2023 - Present

Developer - Team Lead

- Leading development of the BikeOS SW platform, enabling system and application features and services for next-generation eBike systems.
- Planning and alignment of technical roadmap with product management and cross-functional teams.
- Ebike platform SW release and timeline management.
- Team mentorship.
- Prototyping AI-assisted development processes for future-proofing platform features.

Bosch E-Bike Systems

2020 - 2022

Embedded Software Developer

- BikeOS platform development:
  - Embedded Message communication middleware for Bike Engineering System(BES3)
  - Platform software to enable application development
- PoC and R&D feature development
- Major development language: C++

Robert Bosch GmbH

August 2019 - Feb 2020

Engineer Cyber Security for Embedded System (TOP90)

- Development of PoC crypto wallet for Ethereum blockchain-based TOP90: Economy of Things project
- PoC platform: ARM Cortex M33 (Trustzone)

nFuse GmbH

March 2019 - July 2019

Embedded Software Engineer(Student)

- Firmware development for IoT LoRaWAN concentrators.
- NFC based bootloader development for LoRaWAN concentrators.

Magneti Marelli GmbH. , Stuttgart, Germany

April 2017 - Feb 2019

Werkstudent (Working Student)

- Basic Software/Firmware development for instrument clusters of Porsche(Macan) and Audi automobiles.
- Core test routines/algorithms(startup code) in assembly language as a part of the boot-up sequence.
- Design and development on:
  - Cypress Traveo: ARM Cortex R5F architecture-based controllers

Siemens Technologies and Services

May 2014 - Aug 2016

Senior System Engineer(Developer)

As a Senior System Engineer, my responsibilities included :

- Design and development of the latest Siemens S71500 IO and ET200AL device range.
- Conducting training sessions for the team.

Siemens Technologies and Services

May 2013 - May 2014

System Engineer(Developer)

- Design and development of consistency routines that reduced execution time.
- Automation Devices: CPUs, I/O Devices.

TECHNICAL SKILLS

- **Programming:** C | C++ | Python
- **Embedded Comm Protocols:** SPI, I2C, USART, CAN
- **RTOS & Frameworks:** freeRTOS | CMSIS
- **Microcontrollers:** Cortex M3/M4 | Cortex M33(TrustZone)
- **Testing:** GoogleTest and GoogleMock
- **Development Tools:** VS-Code | MCUXpresso(NXP) | GHS-MULTI | Keil | Xilinx Vivado | Eclipse
- **Debugging:** JLink | ST-Link | Segger-SystemView
- **CI/CD & Collaboration:** Jenkins | JIRA | Confluence | Miro
- **Version Control:** Git (BitBucket | Github) | SVN
- **Methodologies:** Agile Scrum (Bosch, Siemens) | V Model (Magneti Marelli)

ACADEMIC THESES/PROJECTS

Master Thesis: Data Middleware for Context Aware Ambient Assisted Living System

Ambient Assisted Living : To conceptualize, design, and develop a data processing middleware for a context-aware system that assists in medication adherence.

Noisy data processing | Complete missing data | Dimensionality reduction on data | Semantic Annotation.

Physical Attack Resilient Hardware Architectures for Elliptic Cryptography

Elliptic Curve Cryptography | Verilog implementations for physical attack analysis | Research: Univeristät Stuttgart and the University of Passau.

EDUCATION

Universität Stuttgart

2016 to 2019

Master of Science (INFOTECH: Embedded Systems)

GPA: 1.8

Biju Patnaik University of Technology, India *July,2008 to July,2012*

Bachelor of Technology in Electrical and Electronics Engg.

Final GPA : 8.67/10

LANGUAGES

German (Intermediate (B2 Ongoing)), **English** (C1), **Hindi** (Native adjacent), **Bengali** (Mother tongue)