Muhamad Andung Muntaha

andung07@gmail.com
+6281380260278

Jakarta, Indonesia
September 25, 2024

A T-Shaped business oriented CTO who has broad horizontal knowledge in information technology and software development with deep vertical knowledge in embedded systems. A highly technical person who speaks, loves to engage discussion with team members and clients to solve complex engineering problem. His current focus is utilizing his expertise to help enterprises developing and utilizing IoT as part of their digital transformation journey.

Work Experience

- **Netra Teknologi Nusantara** — Jakarta, Indonesia
  Chief Technology Officer - Full-time — *Oct 2023 - present*
  - Business Development: Leveraging deep technical expertise and consultative selling to drive business growth, develop tailored solutions, and guide clients through digital transformation as a trusted technology advisor.
  - Innovating IoT Solutions: Leading the development of advanced IoT products and systems that enhance connectivity and functionality from the embedded systems deployed on custom hardware to distributed systems deployed in kubernetes on the cloud.
  - Driving Technological Excellence: Ensuring our technology stack is robust, scalable, and aligned with industry best practices.
  - Fostering Collaboration: Building and mentoring high-performing teams to achieve collective goals and drive business success.

- **Schlumberger** — Jakarta, Indonesia
  Industrial IoT Engineer - Full-time — *June 2022 - Oct 2023*
  - Delivered first commercial project in Industrial IoT in Indonesia by implementing machine learning-based gas lift optimization algorithm on the edge. The solution performs closed-loop control to the control valve to maintain optimum gas injection rate all the time, increasing the oil production to 5 BOPD.
  - Delivered real-time ESP and SRP well monitoring using SLB's Agora IIoT platform and Avalon Lift Surveillance Software.
  - Developed digital twin application of a gas power plant by integrating existing SCADA and SLB's Symmetry process simulation Software.
  - Developed digital twin application of an oil pipeline network by integrating existing SCADA, data pipeline, and SLB's Pipesim flow assurance software.

- **Blue Bird Group** — Jakarta, Indonesia
  IoT Software Lead - Full-time — *May 2021 - June 2022*
  - Led a development team of 4 software engineers developing IoT devices deployed in 20K vehicles.
  - Developed embedded Android application utilizing Android Open Source Project (AOSP).
  - Developed embedded firmware using RT-Thread RTOS targeting STM32 ARM Cortex-M3 using Keil MDK communicating with car's CAN bus system.
  - Interfacing with car's CAN bus system to obtain critical vehicle information from various car manufacturers.
  - Developed IoT control center for Firmware Over The Air update and device management.
  - Developed backend services using Go deployed as microservices in Kubernetes cluster.
  - Improved device security communication by implementing two ways TLS-based authentication mechanism.

- **SoleMetrix** — Singapore (Remote)
  Embedded Software Engineer - Full-time — *June 2020 - May 2021*
  - Designed and implemented a Zephyr RTOS-based embedded software for a sport technology wearable device.
  - Implemented a custom ranging protocol using UWB chip with 5cm precision.
  - Implemented a compression algorithm to stream sensor data efficiently to the host computer.
  - Defined and implemented a BLE peripheral and its characteristics as the device's API.
  - Implemented device drivers to interface with external modules (EEPROM, IMU, and UWB).
  - Implemented an automated hardware-in-the-loop testing environment.

- **Nodeflux** — Jakarta, Indonesia
  Embedded Software Lead - Full-time — *August 2019 - May 2020*
  - Designed and implemented an embedded linux architecture, OTA software update strategy, and remote shell mechanism for an edge computing platform.
  - Built a custom embedded linux operating system using Yocto build system.
  - Developed machine learning applications using CPU and GPU accelerator.
  - Led a development team of three software engineers.

- **Scania Research and Development** — Stockholm, Sweden
  Thesis Research in Real-Time Systems - Internship — *January 2019 - June 2019*

- – Reduced hardware-in-the-loop real-time simulator troubleshooting time by developing a centralized logging & monitoring system.
  - – Improved the system development process by introducing a formal schedulability analysis method based on time demand analysis to validate system's timing requirement.
- **Freelance** Stockholm, Sweden
  Embedded Software Developer - Part-time *August 2018 - December 2018*
  - – Client: Techbros Gmbh Germany - Developed a cellular network automatic testing device, developed using Qt on embedded linux.
  - – Client: Ontel AB Stockholm - Developed bike sharing IoT hardware prototypes by designing and implementing the software in Arm MbedOS while satisfying the system's low-power requirement and addressing an unreliable network constraint.
- **KTH MIST Student Satellite Project** Stockholm, Sweden
  Embedded Software Developer - Project *March 2018 - December 2018*
  - – Achieved a significant milestone in the end-to-end satellite communication by implementing a MISRA-C compliance radio communication API.
  - – Minimized the functional testing time by introducing a radio link communication simulator.
  - – Introduced a proof-of-concept in processing experiment data by extending the ground station software.
- **Schlumberger** Jakarta, Indonesia
  IT Engineer & Application Developer - Full-time *November 2013 - June 2017*
  - – Booked $5.5M soft cost savings by developing 15 Sharepoint applications, 2 web applications, and 2 mobile applications which transformed internal business processes to reduce non-productive time, prevent risks, and increase revenue.
  - – Awarded as the winner of the transformation award 2017 by developing a web and mobile application to increase Account Receivable turnover ratio.
  - – Awarded as the best IT engineer based on user satisfaction feedbacks as well as excellent performance in maintaining IT services quality and availability.

Education

- **KTH Royal Institute of Technology** Stockholm, Sweden
  M.Sc. Embedded Systems, minor: Embedded Software *August 2017 - June 2019*
  - – Related courses: Embedded Systems, Embedded Software, Software Reliability, Compiler and Execution Environment, Networked Systems Security, Modern Method in Software Engineering.
  - – Thesis: Non-intrusive Logging and Monitoring System of A Parameterized Hardware-in-the-loop Real-Time Simulator.
- **10 Nopember Institute of Technology** Surabaya, Indonesia
  B.Eng. Electrical Engineering, minor: Computer Engineering *August 2009 - July 2013*
  - – Related courses: Embedded Systems, Computer Architecture, Data Communication, Computer Networks, Computer Vision, Algorithm & Data Structure, Artificial Intelligence.
  - – Thesis: Self-localization of Humanoid Robot Inside Soccer Field Using Triangulation and Particle Filter Methods.

Skills & Experience

- **Programming Language:** C, C++, C#, Go, Python, Java, JavaScript
- **Real-Time OS:** Zephyr, ARM MbedOS, μC/OS-II, FreeRTOS, ESP IDF, RT-Thread, RT-Linux
- **Hardware:** ST STM32, Nordic NRF52, Espressif ESP32, Qualcomm Snapdragon 430, Xilinx MicroBlaze, Intel Nios, Raspberry-Pi, NVIDIA Jetson, NI CRIO
- **Protocol:** SPI, I2C, UART, CAN, BLE, LoRa, Space Packet Protocol, MQTT, HTTP, GRPC
- **DevOps:** Docker, Kubernetes, Jenkins, ELK Stack, Grafana
- **Others:** Backend and network programming, Embedded Linux (Yocto), IT Operations, IT Security, Cloud Technology, Container Orchestration, Networking.

Industry Certifications

- Cisco Certified Network Associate Routing and Switching (CCNA) - 2016
- ITIL Foundation - IT Service Management - 2015
- Microsoft Certified IT Professional - 2015
- ISC2 System Security Certified Practitioner (SSCP) - 2014