

# Muhamad Andung Muntaha

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Jakarta, Indonesia  
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A T-shaped engineer who has broad horizontal knowledge in information technology and software development with deep vertical knowledge in embedded systems and software. 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

- Blue Bird Group** Jakarta, Indonesia  
*IoT Software Lead - Full-time* May 2021 - present
  - Leading software development (4 software engineers) and operation of IoT devices deployed in 20K vehicles.
  - Developing embedded Android application utilizing Android Open Source Project (AOSP).
  - Developing embedded firmware using RT-Thread RTOS targeting STM32 ARM Cortex-M3 using Keil MDK.
  - Interfacing with car's CAN bus system to obtain critical vehicle information from various car manufacturers.
  - Developing IoT control center with main functionality for Firmware Over The Air update (FOTA) and device management.
  - Developing backend services using Go deployed as microservices in Kubernetes cluster managed by GCP.
- 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 ranging protocol using ultra-wideband 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 only and GPU accelerator.
  - Leading a 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. Electrical Engineering, minor: Embedded Systems* *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, JavaScript, Shell Script
- **Real-Time OS:** Zephyr, ARM MbedOS,  $\mu$ C/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

## Courses

- ITIL Foundation in IT Service Management - Jakarta, 2016
- Schlumberger Route 45 Leading Change Agent Training - Jakarta, 2016
- Cross Platform Mobile Application Development Using Xamarin - Jakarta, 2015
- Configuring Cisco Switch and Router - Jakarta, 2014
- Value Creation for the Business through IT Enablement - Paris, 2014

## Honors & Awards

- Awardee of Lembaga Pengelola Dana Pendidikan (LPDP) Scholarship PK-87 2017
- Jakarta Fishackathon Winner 2017
- Schlumberger Indonesia Transformation Award 2017
- Schlumberger Indonesia Best IT Engineer 2016
- Runner up Indonesian Intelligence Robot Contest 2012