

GENTA GEMILANG

 <https://www.linkedin.com/in/genta-gemilang/> |  0877-8696-6873 |  gentagemilang1303@gmail.com

Education

BINUS ASO School of Engineering , BINUS UNIVERSITY
Bachelor of Engineering – Major in Robotics Engineering
2021–2025
GPA 3.90/4



Summary

Robotics Engineer with hands-on experience in ROS 2, C++, Python, SLAM, autonomous navigation, and robotics simulation. Experienced in developing robotics simulation ecosystems, visual and LiDAR-based SLAM, sensor fusion, obstacle avoidance, RKD, MPC, LQR, PID control, and sensor-actuator integration using Gazebo and Webots. Proficient in Ubuntu/Linux and Docker for robotics development, simulation, and deployment. Currently leading the Cyber-Physical and Automation division at Kalbe Advanced Engineering Center, coordinating multidisciplinary development across robotics, embedded systems, and automation.

Skills

ROS 2 | C++ | Python | Robotics Software Development | Robotics Simulation | Gazebo | Webots | SLAM | Visual SLAM | LiDAR SLAM | Sensor Fusion | Autonomous Navigation | Obstacle Avoidance | Motion Control | Robot Kinematics & Dynamics (RKD) | MPC | LQR | PID Control | Control Systems | Sensor-Actuator Integration | Mobile Robot Systems | Ubuntu | Linux | Docker | Embedded Systems | AI Agents | LLM Integration | AI-Assisted Engineering Workflows | Microcontroller Programming | SBC Integration | Edge Computing | MQTT | OPC UA | Modbus | S7 Protocol | Industrial IoT | Machine Learning | Digital Signal Processing | MATLAB | Rust | Mechatronics | Electronics Engineering | Autodesk Inventor | CAD Modeling | 3D Product Design | Mechanical Design | Reverse Engineering

Professional Experience

PT Kalbe Farma Tbk.

LEAD – CYBER-PHYSICAL AND AUTOMATION | ADVANCED ENGINEERING CENTER

Department : Corporate Digital Technology (CDT)

Mar 2026 – Present

- Lead the Cyber-Physical and Automation division, managing 3–5 intern engineers across robotics, embedded systems, automation, simulation, and Industrial IoT.
- Lead robotics software and simulation development using ROS 2, C++, Python, Gazebo, and Webots, including robotics simulation ecosystems for virtual testing and system validation.
- Develop and evaluate SLAM, autonomous navigation, sensor fusion, obstacle avoidance, motion control, PID, LQR, and MPC for robotic and cyber-physical systems.
- Integrate sensors, actuators, microcontrollers, SBCs, and robotics software, with development and deployment workflows using Ubuntu/Linux and Docker.
- Develop Industrial IoT and edge integration architectures using MQTT, OPC UA, Modbus, and Siemens S7 to connect robots, PLCs, sensors, industrial machines, and software platforms.
- Collaborate with system integration teams on cloud and on-premise integration, while coordinating software, embedded, mechanical, electrical, control, simulation, and field-validation activities.
- Utilize AI-agent-assisted engineering workflows to support software development, robotics simulation, troubleshooting, technical documentation, system analysis, and iterative engineering tasks.

CO-LEAD – ENGINEERING TECHNICAL, IoT & MECHATRONICS ENGINEER | DIGITAL TWIN

Department : Corporate Digital Technology (CDT)

Oct 2025 – Mar 2026

- Led 3–5 intern engineers across IoT, mechatronics, robotics, embedded systems, and engineering simulation.
- Led development of ROS 2-based robotic hand and AGV simulations, covering motion control, sensor-actuator interaction, control algorithm testing, and simulation-based validation.
- Worked on mobile robot autonomy including SLAM, navigation, sensor fusion, obstacle avoidance, PID, LQR, and MPC.
- Integrated microcontrollers, SBCs, sensors, actuators, firmware, and robotics software into mechatronic prototypes using Gazebo, Webots, and Linux-based development environments.
- Developed Industrial IoT solutions and simulation-ready engineering assets for robotics, digital twin, and industrial system integration.

IoT & DIGITAL TWIN INTERN | DIGITAL TWIN

Department : Corporate Digital Technology (CDT)

Sep 2024 – Oct 2025

- Developed connected engineering prototypes integrating sensors, embedded devices, controllers, and software platforms.
- Contributed to Industrial IoT, HVAC automation, machine monitoring, and digital twin initiatives involving real-time telemetry and control.
- Prepared CAD and mesh geometry for engineering simulation and CFD workflows

Tmsuk Co., Ltd. – Fukuoka, Japan

SUMMER ENGINEERING INTERN

Aug 2025 – Sep 2025

- Designed the 3D CAD architecture of an Artificial Emergency Fire & Mission Robot, covering mechanical layout, component arrangement, and robot structure integration.
- Developed and refined mechanical assemblies using Autodesk Inventor to support robotic system prototyping and engineering evaluation.
- Worked within a robotics-focused engineering environment, supporting the development of an emergency-response robotic platform.
- Presented the robot concept, engineering design, and technical capabilities to TMSUK management.

PT. Dirgantara Indonesia (IAe)

SUMMER ENGINEERING INTERN

Feb 2024 – May 2024

- Designed an Altitude Preselect Mode (ALT SEL) autopilot concept for a prototype CN-235 aircraft.
- Developed and tested PID-based elevator servo control for altitude-control response.
- Built a 3D CN-235 model and altitude simulator for physical demonstration and control-system validation.
- Performed control-system analysis, actuator integration, and prototype testing to evaluate system behavior and response.

BINUS ASO

BINUS HEALTH TECH RESEARCH ASSISTANT

Feb 2025 – Jul 2025

- Developed affordable biomedical embedded-system prototypes for health-monitoring applications.
- Performed digital signal processing and feature analysis on cardiac signals using MATLAB.
- Supported research involving sensor data acquisition, embedded systems, and biomedical signal processing.

DIGITAL SIGNAL PROCESSING LABORATORY ASSISTANT

Sep 2023 – Feb 2024

- Assisted students in implementing digital signal processing algorithms using MATLAB.
- Supported laboratory sessions covering signal analysis, filtering, and DSP fundamentals.
- Evaluated laboratory reports and technical assignments.

Asimov.id

HEAD OF DESIGN

Mar 2023 – Mar 2024

- Designed and iterated 3D product enclosures using Autodesk Inventor for an automated payment receiver system.
- Developed multiple prototype designs and fabricated components using 3D printing.
- Performed mechanical design refinement, component placement, and prototype evaluation.

Publication

November 2025

Embedded System Design for Heart Condition Identification Based on Signal Characteristics IEEE Xplore, 2025

- Developed an embedded system concept for heart condition identification using cardiac signal characteristics.
- Applied signal processing analysis to extract meaningful features from biomedical signals.
- Focused on improving early heart condition screening through affordable, accessible, and embedded biomedical technology.
- Publication link: <https://ieeexplore.ieee.org/document/11383030>

Organization Experience

FRESHMEN LEADER, HEAD OF EQUIPMENT DIVISION

Sept 2022 – June 2023

- Lead Equipment Division to support needs from the Event Division
- Organize the financial report and proficiently managed administrative tasks
- Ensured the execution of tasks in accordance with established plans