HAFIZH IRFANSYAH PUTRA

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OBJECTIVE

Master's student in Mechanical Systems Engineering with **2+ years of software and hardware development experience.** Worked on robotics research, embedded systems, drone systems, cross-platform applications, and database design. Collaborated in teams to improve efficiency and solve problems. Experienced in cloud and IoT environments, **currently seeking to apply technical expertise to challenging engineering projects.**

EDUCATION

東京都立大学 大学院 システムデザイン研究科 機械システム工学域 博士前期課程 武居研究室   2026 年 3 月 卒業見込
Master of Engineering, Tokyo Metropolitan University   Mar 2026 (Expected)
Major in Mechanical Systems Engineering, Part of Takesue Laboratory,
Research topic: Vision-Guided Robotic Manipulation for Button Fastening.

Bachelor of Applied Science, Politeknik Elektronika Negeri Surabaya, Indonesia   Jun 2018 - Aug 2022
Major in Computer Engineering,
Research topic: Drone Control Station Intelligence and Security.

LANGUAGE

日本語	日常会話レベル（簡単な会話は可能です）
English	Full Professional and Business Proficiency

SKILLS

Technical Skills

Programming Languages	C/C++, C#, Python, SQL
Frameworks	ROS2, .NET (WPF/Xamarin), PyTorch, ONNX Runtime
Internet of Things	MQTT, MAVLink, Wi-Fi, TCP/IP
Microcontrollers	STM32, ESP32/ESP8266, Arduino/AVR
Design & Modeling	3D design (Fusion 360), PCB design (KiCad/Eagle)
System Administration	Docker, Cloud (VPC), Server & domain management

Soft Skills

Teamwork	Worked in teams of 5+ people across departments
Leadership	Managed teams of 5+ people at a time
Project Management	カンバン, Gantt Chart, Task tracking

EXPERIENCE

Software Developer   Oct 2022 - Mar 2024
PT.CyberQuote Indonesia (subs. CyberQuote Pte Ltd. Singapore)   *Surabaya, Indonesia*
Provides B2B Solutions primarily in the Financial Sector. (Banking, Securities, etc.)

- Migrated banking API consumers across multiple clients.
- Optimized database operations, **cutting processing time by 55%.**
- Designed and developed financial reporting products using ASP.NET and SQL Server.
- Part of the AI research team to investigate LLM solutions in the financial sector.

Software Engineer Internship   Feb 2021 - May 2021
PT.Monster Teknologi Kencana (Monster Group)   *Surabaya, Indonesia*
Preliminary research and prototyping for GPS fleet tracking solutions.

- Evaluated GSM-based IoT GPS trackers for signal integrity, battery endurance, and functional security (relay, lock, alarm, microphone, assisted GPS, etc.).
- Designed vehicle tracker prototype, bigger battery, higher performance module, and added external charging.
- Compared GPS tracking web apps for identifier handling, real-time tracking, and fleet management capabilities.

PROJECTS

Master Degree Research/Thesis.
Skills: **PyTorch, Detectron2, Kinova arm (ROS2), LiDAR camera, path-planning algorithms**

- Integrated dual-arm manipulator with LiDAR camera for precise button fastening.
- **Detectron2 (Mask R-CNN)** trained on 2,331 annotated images for instance segmentation.
- Point-and-select gesture recognition and path-planning for dual-arm coordination.

Research Project Seminar.
Project-based learning with a railway equipment manufacturer to create business proposals.
Skills: **DX, Internet of Things, Teamwork**

- Proposed **IoT-based Inverter Monitoring System** with AI anomaly detection for predictive maintenance.
- Business model with subscription revenue, **increasing uptime and optimizing turnaround time.**

Bachelor Degree Research/Thesis.
Secure & Intelligent UAV Ground Control Station,
Published in IEEE International Electronics Symposium (IES) 2022 Conference.
Skills: **STM32 (C/C++), .NET (C#), Xamarin.Forms, AES-128, Fuzzy Inference System (FIS), UART/UDP, MAVLink**

- Built **STM32**-based UAV with hardware **AES-128** encrypted communication.
- **FIS** for real-time **stability assessment** and **return-time prediction.**
- **Cross-platform UI (Xamarin.Forms)** for Windows/Android with real-time avionic displays.

PIGEON — UAV Ground Control Station.
Skills: **C#, .NET/WPF, MAVLink, TCP/IP, Socket.IO, GMap.NET**

- **Patent-pending** GCS with real-time telemetry, PID tuning, and waypoint mission planning.
- MAVLink 2.0 support via Serial, WiFi/TCP, and internet with multi-aircraft capability.

TRITON — Automatic Antenna Tracker.
Skills: **STM32 (Cortex-M4), ESP8266, Wi-Fi bridging, GPS & IMU, PID motor control**

- Radio-to-WiFi bridge with **auto-tracking antenna** for ˜**5km** UAV range.
- STM32F407 with dual-axis PID control, ESP8266 WiFi AP for serial-to-WiFi bridging.

MedGraph. ESP8266-based communication bridge for 6-lead ECG, SpO2 oximeter, and blood pressure sensors with real-time .NET/WPF visualization.

Sterilization Room UI. Real-time temperature monitoring ($6 \times$ DS18B20 sensors) with OxyPlot graphs, alerts (45–55 ° C), and SQLite logging.

Contributions to 20+ Open-Source Projects. Notable projects:

- **Rcl.NET** and **ros2-dotnet**, ROS2 managed libraries.
- **SIPSorcery**, Real-Time Communication library.
- **YoloDotNet**, Ultralytics' YOLO with ONNX Runtime GPU processing.
- **MavLink.Net**, MAVLink communication stack for UAVs.

Tekat.my.id — Personal Cloud Infrastructures. System administration, Cloud-computing, VPC, IoT Broker (MQTT), AI/ML model hosting (oLLaMa), WebRTC/STUN/TURN, self-hosted platforms (Bluesky PDS, Gitea, game servers, Discord bots).

VerdanskGameBot — Discord Bot. Game server monitoring bot with real-time status updates, multi-game support (node-gamedig), EF Core/SQL persistence, interactive embeds.

Game Scripting/Modding/Tool.

- **ProjectZomboid — SkillsDiary** (Lua), expands gameplay mechanics. Used by **5,400+** players.
- **TyranoScript Memory Unlocker**, visual novel CG/memory unlocker tool.

CERTIFICATIONS

- **EF Standard English Test - C1 Advanced**
  Reading 78/100, Listening 84/100, Writing 59/100, Speaking 55/100.
  Writing and Speaking are assessed as spontaneous/unprepared performance skills.

EXTRA-CURRICULAR ACTIVITIES

- During my graduate studies, I helped present a technical demonstration of a personal assistance robot in a compact trailer house research. 「どこでもヘルスケアパーク２０３０」

- During my undergraduate studies, I helped create an interactive motion-based poster mechanism for a university-wide creativity contest.

LEADERSHIP

- During undergraduate studies, Leader of the university's UAV/flying robotics contest teams **(6-9 people)**. Coordinated technical tasks and guided team execution, achieving **1st place** in KRTI 2020 (Flight Controller Division) and **2nd place** in KRTI 2021 (Ground Control Station Division).

- During undergraduate studies, Head of Media and Information Department of the faculty's student body. Managed the department's **team of 8** for the website and 6 social media platforms with a timeline-based (FIFO) tracker; **211 publication tasks, publishing 192 (91%) with 141 on time (73%),** and launched the faculty's **first** e-magazine.