



Syahrul Fathoni Ahmad

Bachelor of Engineering
Computer Engineering
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Education

Degree	Institute	Current CGPA	Year
S.T., Teknik Komputer	Institut Teknologi Sepuluh Nopember, Surabaya	3.41/4.0	Expected July 2025

Skills

- Full-Stack Development:** Python, Go (Golang), JavaScript, React.js, Node.js, Flask, FastAPI, SQL, MongoDB, Three.js, HTML/CSS
- AI & IoT Systems:** PyTorch, TensorRT, YOLOv8, LSTM, Jetson Nano, ESP32, Arduino, C++, PyQt, RTMP/RTSP Streaming
- DevOps & Cloud:** Git, Docker, VPS Hosting & Configuration, Vercel, Azure, Nginx, Apache

Work Experiences

- Freelance** 2022 - Present
Freelancer Hybrid
 - Retrux-Shelf-Eye (AI Inventory Management System):** May 2025 – Present
Tools: Python, PyQt, PyTorch GitHub
 - Developed a real-time shelf stock monitoring application using Python, with a user interface built in **PyQt**.
 - Implemented an advanced object detection model (**RT-DETR**) using **SAHI** for sliced inference.
 - Engineered key software utilities based on client needs, including **multi-camera support** and dynamic directory management.
 - JAREE ITS (Academic Journal Platform):** June 2025 – Present
Tools: OJS, PHP, MySQL, CSS GitHub
 - Led a critical platform migration from OJS 2 to OJS 3.4, successfully upgrading a live system with **597k+** records and **30k+** user accounts.
 - Engineered the complete academic peer-review workflow and developed a **custom front-end theme** to enhance user experience.
 - Padel-Clipper (IoT Video Highlight System):** Aug 2025 – Present
Tools: Python, Flask, ESP32, Express.js, PHP GitHub
 - Developed the **Flask**-based monitoring dashboard and integrated it with a team-built **Express.js** backend for a real-time video clipping service.
 - Engineered and programmed an **IoT push-button device** using **ESP32** and a custom PCB to trigger highlight captures from IP cameras.
 - Configured and deployed the entire system on a **VPS**, successfully scaling the product to serve nearly **250 active customers**.
 - ECG Exhibition Prototype (R&D Collaboration):** Oct 2022 – Dec 2022
Tools: Python, Raspberry Pi, Biomedical Sensors, Hardware Prototyping GitHub
 - Co-developed a functional ECG device for a technical exhibition, validating its performance with a **95-100% accuracy** in real-time heart rate detection.
 - Engineered the end-to-end system, from the **Arduino signal acquisition firmware** to the design and fabrication of the physical, exhibition-ready casing.
 - 3D Container Loading Optimizer:** July 2025 – Aug 2025
Tools: Python, FastAPI, React.js, Three.js GitHub
 - Developed a web-based logistics tool to solve the 3D Bin Packing Problem, achieving a container fill rate of **87-89%**.
 - Researched and implemented multiple packing algorithms in Python, including **Genetic Algorithm**, BLF, and CLPTAC method to find the optimal solution.
 - Built the full-stack application with **React.js**, **FastAPI**, and a **Three.js** canvas for 3D visualization.

- **PT. Telkom Indonesia Regional V**

Internship Programmer (ROC Department)

Feb 2024 - Apr 2024

Surabaya, Indonesia

- **Automation & Data Pipeline Development:**

- ◊ Reduced data retrieval latency by over **80%** by engineering an automated web scraping pipeline with Python and Apache Airflow.

- ◊ Developed and deployed 2 Optical Character Recognition (OCR) bots to bypass CAPTCHA on internal systems.

- **System Integration & Reliability:**

- ◊ Developed a resilient VPN auto-reconnect system (Power Automate) that effectively **eliminated connectivity downtime** and prevented work disruptions.

- ◊ Created a suite of 7 integrated tools that reduced manual data processing tasks by **40%**.

- **SDN Klampis Ngasem I**

Robotics Extracurricular Tutor

Aug 2022 - Jul 2023

Surabaya, Indonesia

- Developed and assembled **Arduino-based Obstacle Avoidance Robots**, preparing *10+ units* for student use and aligning lessons with an existing robotics curriculum to support progressive learning.

- Mentored students in the **BARONAS competition** by ITS Electrical Engineering, collaborating with a team of three instructors to deliver hands-on sessions, leading the team to reach the *semi-finals*.

Individual Projects

- **Vehicle Speed Estimation System Using Drone with Jetson Nano-based YOLOv8 Method**

Feb 2025 - May 2025

Tools: Python, YOLOv8, Jetson-Nano, TensorRT, RTMP

[\[GitHub\]](#)

- Developed a real-time vehicle speed estimation system, achieving a peak measurement accuracy of **99.55%** and consistent performance of over 90% at an optimal 20-meter altitude.

- Trained a superior YOLOv8 model for night-time conditions (mAP50 of **0.93**) and leveraged **TensorRT** to triple inference speed (from **>90ms** to **<35ms**), enabling real-time processing on the Jetson Nano.

- **Padel-Clipper (IoT Video Highlight System with Golang)**

June 2025 - August 2025

Tools: Go (Golang), RESTful API, Flask, Python, PostgreSQL

[\[GitHub\]](#)

- Developed a RESTful API in Go (Golang), leveraging goroutines and channels to efficiently handle concurrent requests from multiple IoT devices for a real-time video clipping service.

- **BengkelMate: Workshop Business Process Digitalization**

Oct 2024 - Jan 2025

Tools: MERN Stack (MongoDB, Express.js, React.js, Node.js)

[\[GitHub\]](#)

- As the dedicated **Website Developer** on a three-person team, led the development of a web application that digitized the entire workshop workflow by implementing a comprehensive **role-based system** for Security, Service Advisors, and Spare Parts teams.

- Delivered a high-quality user experience, validated by excellent Lighthouse scores in **Performance (96)**, **Best Practices (96)**, and **SEO (92)**, ensuring a fast and reliable tool for daily operations.

Campus Organization Experiences

- **BK MWA-WM ITS**

Head of Human Resources

Jul 2023 - Jul 2024

Surabaya, Indonesia

- Led HR division for **40+ members**, managing training programs and recruitment process for **50+ applicants**.

- **TEKMEET 2023**

Project Officer

Jan 2023 - Mar 2023

Surabaya, Indonesia

- Organized sports tournament for **300+ students** and coordinated charity event serving **50+ people**.

Certifications

- **Intern - PT. Telkom Indonesia Regional V**, [Internship-Certificate](#)

Feb 2024 - Apr 2024

- **Marketing Content with Gapura Digital Google**, [Course](#)

Sept 2021

- **Intermediate Machine Learning by Kaggle**, [Course](#)

Dec 2023

- **Feature Engineering by Kaggle**, [Course](#)

Dec 2023