

# Bagus Eka Bagaskara

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Information Technology student passionate about connecting hardware and software. Skilled in C++ for embedded systems (Arduino, ESP32) and modern front-end development with React. Eager to contribute to innovative IoT projects in an entry-level role by applying hands-on development skills.

## SKILLS

**Hard Skills:** C++, Python, JavaScript, SQL, HTML/CSS, Microcontroller Programming (Arduino/ESP32), Sensor Integration, Motor Control, MQTT, React, Responsive Design, Git, GitHub, Docker, Wokwi, Blender.

**Soft Skills:** Problem Solving, Effective Communication, Initiative, Time Management, Adaptability, Openness to Feedback.

## WORK EXPERIENCE

### IoT Intern

Apr 2025 - May 2025

Badan Riset dan Inovasi Nasional (BRIN)

Tangerang Selatan, Indonesia

#### Description:

- Designed and developed a **compact GNSS-based IoT monitoring system** using ESP32, Walksnail GPS, and DHT11 sensor for BRIN's AMCS EMFM HW division.
- Programmed the ESP32 to parse NMEA sentences (\$GPGGA, \$GPGSA, \$GPGSV, \$GPRMC), structure data into JSON, and transmit securely to BRIN's MQTT server at 15-second intervals.
- Built a custom 3D-printed enclosure for the device, ensuring portability and protection for field deployment and environmental testing.
- Utilized **Arduino IDE, MQTXX, MQTT Explorer, and Tinkercad** to integrate hardware, develop firmware, and validate real-time transmission.
- Gained hands-on experience in **embedded systems, IoT protocols, hardware integration, and rapid prototyping**, bridging theory with real-world implementation.

### Operations Intern (PKL)

Jun 2022 - Aug 2022

PT YUJU Indonesia

Bekasi, West Java

- Streamlined AC component preparation and inventory processes, ensuring **on-time availability for 100+ installation and maintenance schedules**.
- Supported technicians in organizing and checking parts, **reducing preparation errors by 20% and cutting setup time**.
- Managed inventory records, **minimizing shortages and delays across operational tasks**.
- Cultivated **discipline, accountability, and collaboration** within a professional environment.

## PROJECTS

### Dockerized Currency Converter

Jul 2025 - Jul 2025

- Engineered and deployed a containerized web application using Docker, **reducing environment setup time by over 90%** and ensuring deployment consistency.
- Developed a Flask-based REST API that integrated with a third-party service to provide real-time conversion rates for **over 10 global currencies**.

### Joystick-Controlled Robotics Arms

Feb 2025 - Feb 2025

- Teknologi: Arduino, C++, Servo Motors, Joystick Module*
- Designed and built a 4-axis (4-DOF) robotic arm for precise object manipulation.
- Implemented intuitive, real-time control logic using a physical joystick module to translate user input into complex servo movements.

### Smart Automatic Door System

Feb 2025 - Feb 2025

- Teknologi: Arduino, Wokwi, Sensor Integration (Ultrasonic, LDR, DHT11)*
- Designed and simulated a smart door system that opens/closes automatically based on real-time data from multiple integrated sensors.

### Autonomous Robotic Car

Feb 2025 - Feb 2025

- Engineered an autonomous vehicle that achieved a **95% success rate** in obstacle avoidance by implementing an active scanning system with a servo-mounted ultrasonic sensor.
- Implemented a dual-sensor hazard system (flame and temperature) that achieved a **85% detection rate** in test conditions, triggering an automated fan response.

### Urban Night City (3D Animation)



Nov 2024 - Jan 2025

- Teknologi: Blender, 3D Modeling, Animation, Particle Simulation*
- Created a complete low-poly 3D animated scene, handling all aspects from environmental design and dynamic lighting to character rigging and animation.

EDUCATION

<b>Bachelor of Science in Computing</b>	<b>Sep 2023 - Present</b>
President University	<b>GPA: 3.72/4.00</b>
Honors: Jababeka Scholarship	
Concentration: Internet of Things (IoT)	
Relevant Coursework: Embedded Systems Programming (C++), Web Development (React), Cloud Integration, Network Fundamentals, Database Management.	
<b>Vocational High School Diploma in Computer and Network Engineering (TKJ)</b>	<b>May 2020 - May 2023</b>
SMK Armaniyah – Bekasi, Indonesia	<b>GPA: 83,91/100</b>
<ul style="list-style-type: none"><li>Specialized in computer networking, server administration, and hardware troubleshooting.</li><li>Achieved a final average national examination score of 83,91/100</li></ul>	

CERTIFICATIONS

<b>Certificate of Internship – Research Center of Electronics BRIN (Credential ID: B-13194/III.6.2/TK.14/6/2025)</b>  by <b>Badan Riset Jun 2025 dan Inovasi Nasional (BRIN)</b>	
<b>Certificate of Achievement – Urban Night City</b>  by <b>President University, FINPROTION 2025</b>	<b>Feb 2025</b>

LANGUAGES

**Bahasa Indonesia** (Native proficiency) • **English** (Limited working proficiency)