

# Dimas Dzikra Pratama

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## Education

### IPB University

Bachelor of Applied Computer Engineering Technology.

2023-Present

- CGPA 3.60 out of 4.00

## Projects

### Smart Livestock Cleaning Robot using YOLOv8, Jetson Nano & Web Monitoring

2025

- Designed an intelligent robotic cleaning system for livestock barns using computer vision-based manure detection
- Implemented YOLOv8 on NVIDIA Jetson Nano to perform real-time detection of manure and obstacles
- Integrated ESP32-based control system to enable automated and targeted cleaning actions
- Developed a web monitoring dashboard to display cleaning status, waste container capacity, and battery level in real time
- Evaluated model performance using confusion matrix analysis to validate detection accuracy and system reliability

### Anti-Theft Detection System using PIR Sensor with Web & Firebase Integration

2025

- Built an IoT-based security system using a PIR sensor to detect human motion in real time
- Integrated Firebase Realtime Database for continuous monitoring and event logging
- Developed a web dashboard to visualize alert status, timestamps, and detected activity
- Increased system responsiveness through optimized data transmission and sensor calibration

### Automatic Earthquake Detector using ADXL355 Sensor

2024

- Developed a vibration alert system to detect abnormal motion and provide early emergency warnings
- Analyzed vibration patterns to identify indicators of mechanical failure or hazardous conditions
- Integrated ADXL335/ADXL355 accelerometer with a microcontroller for real-time data processing
- Implemented detection algorithms to trigger alerts when abnormal vibration thresholds were exceeded

### Object Counter System with Seven-Segment Display

2024

- Built an automated object-counting system using IR sensor, IC 4026, and seven-segment display
- Simulated and validated circuit behavior in Proteus before hardware implementation
- Developed a conveyor-based prototype capable of real-time and accurate object detection
- Improved counting efficiency and reduced manual errors through optimized sensor integration

### Electric Piano using NE5555 Timer IC

2023

- Designed and assembled an electronic piano circuit using the NE555 timer to generate distinct audio frequencies
- Optimized component configuration to achieve stable tone output across multiple keys
- Enhanced understanding of analog electronics, timing circuits, and frequency modulation

## Organizational Experience

### Internal TEKOM

#### Member of innovation Division

2023 - Present

- Coordinated multiple student-led events with participation reaching 80–150 attendees per program
- Assisted in planning and executing division agendas, ensuring on-time completion of event preparation tasks
- Managed logistical components such as venue preparation, documentation, and communication with internal committees
- Supported the development of new event concepts aimed at increasing student engagement across TEKOM activities

## Technical Skills and Certifications

**Computer Languages:** C, Python, CSS, HTML, PHP, JavaScript.

**Software:** Cisco Packet Tracer, Proteus, Arduino IDE, Matlab, Jupyter Notebook, EasyEDA.

**Techniques:** Basic Networking, Routing and Switching, Embedded System, Microcontroller Programming, Machine Learning.

**Certifications:** CCNA: Switching, Routing, and Wireless Essentials (2024), CCNA: Introduction to Networks (2023).