

Rafif Genadratama

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EDUCATION

Politeknik Negeri Bandung

Bachelor of Applied Informatics

West Bandung, West Java

Aug. 2023 – Aug. 2027 (*expected*)

EXPERIENCE

Miss-Distance Indicator Research Assistant

Politeknik Negeri Bandung in collaboration with PT. LEN Industri

Oct. 2025 – Present

West Bandung, West Java

- Implement a correlation algorithm to estimate the time difference of arrival of a sound between two microphones
- Implement a time difference of arrival localization algorithm to estimate source position in a Miss-Distance Indicator System
- Utilize HD Transmission System Device to transmit data
- Build a GUI application for displaying and operating the sound source localization system
- Implement a simple multichannel audio conversion using FFMPEG
- Achieve a mean error of 2.25 meters in an anechoic chamber

Fault Seeding Research Assistant

Politeknik Negeri Bandung

May 2025 – Aug. 2025

West Bandung, West Java

- Utilize Cucumber with Gherkin language to write test case scenarios for a learning management system
- Implement fault seeding method to measure the effectiveness of a test case
- Implement data access object pattern for interacting with the database
- Utilize Selenium in Java for executing the blackbox testing based on each test cases
- Utilize Java secure shell library to access database with appropriate credentials

PROJECTS

Pothole Detection System | *Python, YOLO, Image Annotation*

Nov. – Dec. 2025

- Utilize YOLOv8 to detect pothole in road
- Achieve a mean average precision (mAP) of 0.7
- Implement a simple plain HTML visualization hosted in GitHub Pages

Garbage Classification | *CNN, Data Augmentation, Data Preprocessing, PyTorch*

Feb. – June 2025

- Implement CNN Architecture in PyTorch
- Implement simple image augmentation techniques such as rotation and flip
- Achieve a test accuracy of 68%

Web Server | *C, TCP/IP, Socket Library*

Dec. 2024

- Implement C socket library for a simple web-based question and answer chat medium
- Implement socket management for memory efficiency
- Utilize JavaScript asynchronous function for simple client-server mechanism

Terminal-Based Tic-Tac-Toe | *C, C Standard Library, Abstract Data Type, Game Design*

Oct. – Dec. 2023

- Implement various C standard library to accommodate features
- Utilize binary write into a file for saving game data
- Tried to implement a MinMax Algorithm for the computer side of the game
- Implement abstract data type for managing game data

TECHNICAL SKILLS

Data: Python, Linear Regression, NumPy, Data Augmentation

Database: Neo4J, MongoDB, PostgreSQL, MySQL

Image Processing: Convolution, Filtering, Contour Detection, Edge Detection, Histogram

Web Development: HTML, CSS, JavaScript, FastAPI