GIOVANNI MUHAMMAD RADITYA

Informatics Engineering Student

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mradityagio | mraditya01 | Kawaguchi Lab

EDUCATION

Master of Electrical and Informatics Engineering
Nagoya University

2024 – Present | Nagoya, Japan

- **Graduate Researcher, Kawaguchi Lab (Ubiquitous Computing)**
  Research: Developing a teleoperation framework for robotic arm control with real-time feedback and predictive modeling.

Bachelor of Mechanical Engineering
Nagoya University

2019 – 2023 | Nagoya, Japan

- GPA: 4.05/4.3 (Cumulative)
- Awards: Japanese Government MEXT Scholarship (2019-2023)
- **Undergraduate Researcher, Takeda Lab (Signal Processing Group)**
  Thesis Title: Anomalous Sound Localization and Classification in Urban Environments for Mobile Autonomous Vehicles.

EXPERIENCE

Control and Planning Engineer (Part-time)
TIER IV

2023 – Present | Nagoya, Japan

- Contributing to **Autoware**, the world's leading open-source autonomous driving project based on ROS2.
- Developed an interface between Autoware and CARLA in ROS2 for simulation and real-world integration.
- Improved geometrical calculations (Triangulation, SAT, XOR) for better spatial reasoning and collision detection.
- Created a new library to replace Boost::geometry function for faster computation in Autoware.
- Created a trajectory evaluator to assess planning and control efficiency.

Private Tutor (Physics and Mathematics)
Minori

2022 – Present | Nagoya, Japan

- Teaching high school students fundamental and advanced concepts in physics and mathematics.
- Preparing students for university entrance exams by providing problem-solving strategies.

RESEARCH PUBLICATION

- **Anomalous Sound Localization and Classification in Urban Environments for Mobile Autonomous Vehicles**
  Muhammad Raditya Giovanni, Alexander Carballo, Kento Ohtani, Kazuya Takeda
  7th International Symposium on Future Active Safety Technology toward Zero Traffic Accidents (FAST-Zero'23), 2023, Kanazawa, Japan.

PROJECTS

Masked Audio Reconstruction using U-Net for Anomaly Detection
DL Sound Processing | Link

- Developed a U-Net model to compute reconstruction error of frequency mask mel-spectrograms using Python, Keras, and Librosa.
- Collected dataset around Nagoya University and Daini Aichi Hospital with 8 microphones over 10 days.

Arduino Powered GPS Waypoint Autonomous Robot
Robotics | Link

- Built an autonomous robot navigating GPS waypoints and avoiding obstacles.
- Integrated Arduino modules: compass, GPS, magnetic sensor, ultrasonic sensor, and Bluetooth.

LANGUAGES

English ●●●●●

Indonesian ●●●●●

Japanese ●◐○○○

TECHNICAL SKILL

Programming Languages

Python | Jupyter | C/C++ | Arduino | MATLAB | JavaScript | CSS

Development Software & Platforms

VS Code | ROS2 | Autoware | Git/Github | Linux | Docker

Version Control & Collaboration

GitLab | Bitbucket | SVN