Giovanni Muhammad Raditya

Electrical, Electronic, and Informatics Engineering Student

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Technical Skills

Languages: Python, Java, C/C++, MATLAB, JavaScript, SQL, CSS/HTML
Developer Tools: VS Code, Git, SOLIDWORKS, LTspice, Simulink, GIT, MySQL
Technologies/Frameworks: ROS2, MQTT, Autoware, A-Frame, Unity, CARLA, OpenCV, TensorFlow, Keras

Education

Nagoya University   **2024 – Present**
Master of Electrical and Informatics Engineering   *Nagoya, Japan*

- **Graduate Researcher, Kawaguchi Lab (Ubiquitous Computing)**
  Research Topic: Developing safety system in teleoperation framework for robotic arm by streaming a 3D environment around the robotic arm to the VR.

Nagoya University   **2019 – 2023**
Bachelor of Mechanical Engineering   *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.

Professional Experience

TIER IV 🔗   **2023 – Present**
Control and Planning Engineer (Part-time)   *Nagoya, Japan*

- Developed an Autoware–CARLA interface for integrated simulation and real-world validation.
- Built a high-speed geometry library (triangulation, SAT, XOR) replacing Boost::geometry, improving efficiency.
- Established unit tests and CI/CD pipelines to ensure cross-environment stability and performance.

Sony Honda Mobility 🔗   **Aug 2025 – Sep 2025**
Autonomous Driving System Intern   *Tokyo, Japan*

- Enhanced topology prediction by integrating temporal features to the machine learning model, improving consistency.
- Deployed the model on AWS for learning and benchmarking with a 3-member team.
- Designed a framework to evaluate temporal topology changes for safer adaptive route planning.

Journal Papers / Conference Proceedings

Anomalous Sound Localization and Classification in Urban Environments for 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).

Projects

Piper Robotic Arm VR interface | 🐙Link | *Javascript, React, Aframe*   **February 2025**

- Designed and developed an immersive VR interface to control the Piper Robotic Arm using inverse kinematics (IK) to simulate realistic and precise arm movement in 3D space.
- Engineered seamless interaction between the robotic arm and VR environment by integrating Aframe with custom IK algorithms.

Languages

- **English**: Fluent
- **Indonesian**: Native
- **Japanese**: Basic