# MUHAMMAD RAFI GUNAWAN

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Bandung, Indonesia

Telecommunications Engineering student at Telkom University and research assistant at the Adaptive Network Laboratory. Passionate about network engineering, cloud engineering, and DevOps, with a strong commitment to continuous learning and professional development.

## Work Experiences

**Adaptive Network Laboratory** - Bandung, Indonesia                               Jul 2024 - Present
*Research Assistant*

Research laboratory focused on adaptive networking, SDN/NFV, IoT networking, V2V, Cloud Computing, 5G, and supporting experimental research and technical development.

- Collaborated on research activities with Universiti Teknologi Malaysia (UTM), including technical discussions and research alignment on SDN-enabled IoT systems.
- Conducted research on Software-Defined Networking (SDN) for IoT, focusing on multi-tenant network slicing and traffic isolation mechanisms.
- Utilized network virtualization and slicing concepts
- Containerized research applications and network services using Docker, and deployed them using Kubernetes to improve reproducibility, scalability, and deployment consistency.

**Adaptive Network Laboratory** - Bandung, Indonesia                               Jul 2025 - Present
*Head of Research Division*

- Led and managed a team of research assistants within the Adaptive Network Laboratory to ensure progress and timely completion of research tasks.
- Monitored research execution, tracked weekly progress, and ensured task alignment with laboratory research objectives and deliverables.
- Coordinated task distribution, workload prioritization, and internal communication to maintain effective team performance.

**Telecom Infra Project (TIP)** - Bandung, Indonesia                               Jul 2025 - Sep 2025
*5G Researcher*

Industry initiative focused on accelerating open and disaggregated telecom infrastructure, including OpenRAN and 5G RAN ecosystem development.

- Conducted research on 5G Radio Access Network (RAN) concepts, including OpenRAN architecture and disaggregated RAN components.
- Installed and configured OpenAirInterface (OAI) as an open-source platform for 4G/5G experimentation and RAN implementation learning.
- Produced technical documentation covering installation procedures, configuration details, and experiment notes to support reproducibility and future reference.

## Education

**Universitas Telkom** - Bandung, Indonesia                               Aug 2023
*Bachelor of Telecommunications Engineering, 3.84/4.00*

- Research Assistant at Adaptive Network Laboratory, Telkom University
- Member of KEMMA Student Organization (Kemahasiswaan Madiun)
- Research contributor in Telecom Infra Project (TIP)
- Academic Mentor

**Education – SMA (Senior High School)** - Ngawi, Indonesia                               Aug 2021 - Jul 2023
*Senior High School,  Science Program*

- Ranked in the Top 15 students for academic performance
- Completed high school through a 2-year acceleration program

## Training / Courses

**NetSchool (Adaptive Network Laboratory)** - Bandung, Indonesia                               Sep 2023 - Dec 2023
*Participant*

A study group and technical training program organized by the Adaptive Network Laboratory.

- Learned Linux fundamentals, basic networking concepts, and Python programming through hands-on training and guided sessions.

- Practiced command-line operations, basic network configuration, and scripting fundamentals for technical problem-solving.

**NetDevelopment (Adaptive Network Laboratory)** - Bandung, Indonesia                    Jan 2024 - May 2024
*Participant*

Technical recruitment and training program organized by the Adaptive Network Laboratory, focused on research preparation and practical skill development.

- Reviewed research papers on Software-Defined Networking (SDN) and Network Functions Virtualization (NFV) topics to strengthen research fundamentals.
- Built and deployed containerized applications using Docker to improve development workflow and deployment consistency.
- Developed web applications using the Django framework, focusing on backend development and website functionality.
- Completed practical projects including a portfolio website and a library website as program deliverables.
- Applied Linux-based workflows and basic troubleshooting to support development and deployment during the program.

**NetSchool (Adaptive Network Laboratory)** - Bandung, Indonesia                    Oct 2024 - Dec 2024
*Instructor*

Technical training program organized by the Adaptive Network Laboratory to develop students' foundational networking and programming skills.

- Delivered training sessions on Networking fundamentals, including basic concepts and hands-on practice.
- Assisted participants with troubleshooting and understanding key concepts to ensure learning progress and skill improvement.

**Adaptive Training (Adaptive Network Laboratory)** - Bandung, Indonesia                    Jan 2025 - Mar 2025
*Instructor*

Technical training program organized by the Adaptive Network Laboratory, focused on monitoring and observability fundamentals.

- Taught monitoring fundamentals using Grafana and Prometheus for visualization and metrics collection.
- Configured Node Exporter and Prometheus scraping to collect system-level metrics for observability.

**Digital Skola — DevOps Engineer Bootcamp** - Online (Indonesia)                    Nov 2025 - Feb 2026
*Participant*

Industry-based DevOps bootcamp covering Linux administration, networking, containerization, cloud computing (AWS/GCP), Infrastructure as Code (Terraform), CI/CD, Kubernetes, monitoring, and GitOps.

- Completed DevOps training covering Linux/Unix administration, networking fundamentals, and Bash scripting
- Built containerized environments using Docker (images, Docker Hub, Compose) and learned container orchestration concepts.
- Learned cloud fundamentals and core services on AWS and GCP for DevOps workflows.
- Implemented Infrastructure as Code (IaC) using Terraform, Ansible to manage and automate infrastructure provisioning.
- Studied CI/CD pipelines using Jenkins and GitLab CI/CD, including automation and best practices.
- Practiced Kubernetes fundamentals (architecture, workloads, deployments, scaling) and workload management.
- Learned monitoring and observability using Grafana and Prometheus, including metrics scraping with exporters.

## Skills

- **Language**: Native Indonesian, Intermediate English
- **Networking**: Subnetting, VLSM, TCP/IP, Routing, Switching, VLAN, Inter-VLAN Routing, DNS, VPN Concepts, Linux Networking, Network Troubleshooting
- **DevOps & Cloud Tools**: Linux, Git/GitHub, Docker, Kubernetes, Prometheus, Grafana, Terraform, Jenkins, GitLab CI/CD, GitOps (Argo CD), AWS Basics, GCP Basics, Bash Scripting