

MUHAMMAD EMIR RISYAD

COMPUTER SCIENCE STUDENT

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SUMMARY

Motivated computer science student with a strong interest in backend development, specializing in TypeScript and modern backend frameworks. Experienced in designing and implementing scalable APIs, optimizing database interactions, and building reliable systems. Skilled at problem-solving, collaborative development, and learning new technologies quickly. Seeking an internship opportunity to contribute to backend engineering projects while further developing expertise in distributed systems and cloud-based architectures.

PROJECTS

Shinjang | <https://github.com/rimuhamu/shinjang-v2>

Dec 2023 -

Order Tracking & Currency Conversion Web Application

Technical Stack: Next.js 14, TypeScript, React, PayloadCMS, MongoDB, Tailwind CSS, TanStack Table

- Order tracking system with search/filter functionality and real-time status updates.
- Multi-currency conversion calculator (KRW, JPY, CNY) with shipping cost calculations.
- Admin dashboard for customer and product management with relational data modeling.
- Responsive mobile-first design with form validation using React Hook Form and Zod.
- RESTful API integration with MongoDB for data persistence.

Medrec | <https://github.com/rimuhamu/medrec>

Jan 2025 - Sep 2025

Medical Record Management Web Application

Technical Stack: Hono.js, TypeScript, SQLite, Drizzle ORM, JWT Authentication, OpenAPI, Zod Validation

- Implemented role-based authentication (JWT) with admin/user access controls and patient data isolation
- Designed normalized SQLite database with Drizzle ORM supporting patients, medications, medical history, and diagnostic test results
- Created comprehensive OpenAPI documentation with automated validation using Zod schemas
- Developed middleware for authentication, authorization, and request logging with proper error handling
- Features CORS configuration, database migrations, and environment-based configuration management

Earthquake Analytics & Alert Pipeline

Aug 2025

Technical Stack: Python, Apache Kafka, Apache Spark, Apache Airflow, AWS S3, AWS Redshift, PostgreSQL/PostGIS, Cassandra, MongoDB, Streamlit, Folium, Trino

- Real-time earthquake ingestion pipeline from USGS GeoJSON feeds using Kafka producers/consumers.
- Batch data processing with Spark for historical aggregation by region, time, and magnitude bins.
- Workflow orchestration via Airflow DAGs for daily ingestion, cleaning, and loading into AWS Redshift & PostGIS.
- Spatial queries on earthquake data using PostGIS and GeoPandas for geospatial analysis.
- Interactive Streamlit + Folium dashboard with real-time updates and filters for earthquake visualization.
- Data persistence across Cassandra (time-series), MongoDB (document queries), and Redshift (analytical queries).
- Federated query layer with Trino for analytics across Redshift, Cassandra, and PostgreSQL.
- Docker-based local infrastructure with Kafka, Zookeeper, Postgres/PostGIS, Cassandra, MongoDB, and Airflow.

Tumbuh

Aug 2025 -

Plant Identifier Android Application

Technical Stack: Android (Kotlin), TensorFlow Lite, Retrofit, Room Database, Jetpack Compose, Firebase

- Mobile app that identifies plants from photos using on-device ML models.
- Offline-first design with Room for caching and quick lookups.
- Searchable plant encyclopedia with scientific details, care tips, and classifications.
- Cloud sync with Firebase for user favorites and history backup.
- Modern UI built with Jetpack Compose and responsive material design.
- REST API integration for extended plant database access.

SKILLS

- **Languages:** TypeScript, Python, Kotlin, Java
- **Backend & Databases:** SQL, NoSQL, RESTful APIs, Unit Testing, Microservices
- **Cloud & DevOps:** AWS (EC2, S3, Lambda), Docker, CI/CD (GitHub Actions)
- **Web Development:** Responsive Design, Full-stack Development, Modern JavaScript Frameworks
- **Mobile Development:** Android (Kotlin, Java)

EDUCATION

Bachelor of Applied Computer Science

Sep 2019 -

Technische Hochschule Brandenburg

- Relevant coursework in Android Development, AWS and Software Engineering

Bachelor Informatik - Digital Innovation (Erasmus+ Programme)

Feb 2023 - Jul 2023

Fachhochschule Vorarlberg

- Relevant coursework in SAP, AI and Web Development

VOLUNTEERING

Earthling Indonesia e.V.

Mar 2021 - Jan 2022

Web Developer

- Contributed to the development of the official website for CODEGREEN AI Hackathon 2021, an event promoting sustainable innovation and AI-driven climate solutions.
- Implemented form submission functionality using jQuery, improving user interaction and data collection for event participants.

ADDITIONAL INFORMATION

- **Languages:** English, German, Indonesian
- **Certifications:**
 - AWS Cloud Practitioner (AWS)
 - Full Stack Open (University of Helsinki)
 - Rapid Developer Certification (Mendix)
 - Postman API Fundamentals Student Expert (Postman)