Ravie Hasan Abud

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Ravie is a dedicated final-year computer science student at Universitas Indonesia with a strong passion for artificial intelligence, machine learning, and software development. Experienced in building full-stack applications and conducting research-driven machine learning projects. Proficient in Python, Java, JavaScript, Dart, and Go, with experience using frameworks such as Spring Boot, Flutter, Django, and React. Known for being responsible, detail-oriented, eagerness to embrace new challenges, and highly committed to continuous learning. He is currently seeking professional opportunities to grow and make a meaningful impact in the tech industry.

EDUCATION

Universitas Indonesia, Faculty of Computer Science — Depok, Indonesia
Bachelor of Computer Science — 2022 – Present
Cumulative GPA: 3.94/4.00

SMA Negeri 1 Bogor — 2019 – 2022
Majoring in Mathematics and Natural Science

WORK AND ORGANIZATIONAL EXPERIENCES

Faculty of Computer Science, Universitas Indonesia — Aug 2023 – Present
Teaching Assistant of Data Structures and Algorithms (Short Term 2025), Introduction to AI and Data Science (Even Term 2024/2025), Automata and Theory of Languages (Even Term 2024/2025), Platform-Based Development (Odd Term 2024/2025), Design and Analysis of Algorithms (Odd Term 2024/2025), Calculus 2 (Short Term 2024), Linear Algebra (Even Term 2023/2024), Discrete Mathematics 1 (Odd Term 2023/2024)

- Design and curate both programming and mathematical assignments, labs, and projects tailored to to each course's objectives—from theoretical foundations to real-world applications.
- Conduct regular tutorial and exam preparation sessions, and ensure that students feel comfortable in seeking help.
- Assess student works and provided personalized constructive feedback to support growth and deeper understanding.
- For algorithm-intensive courses, author programming problems in the style of competitive programming to sharpen students' analytical skills and algorithm design.
- For theoretical courses, develop structured exercises to strengthen students' understanding of mathematical modeling.
- For AI and data science courses, support students in bridging mathematical theory, data-driven reasoning, and algorithmic implementation, enabling them to apply core AI concepts to real-world case studies.
- For software development courses, guide students through end-to-end web (Django) and mobile development (Flutter) and deliver live demos for each assignment and project.

BEM Faculty of Computer Science, Universitas Indonesia
Staff of Student's Career and Scholarly Development Department — Apr 2023 – Mar 2024

- Actively supported and facilitated various student development events, including internship workshops, IELTS preparation, and technical competitions.
- Led the appreciation program for student competition winners by collecting achievement data, coordinating publication, and managing token of appreciation distribution to boost motivation and student morale.

Intern Staff of Science Bureau — Sep 2022 – Dec 2022

- Served as Vice Project Lead for the Science Fun Fact event, managing the project from ideation to execution and promoting scientific curiosity and engagement within the faculty.

COMPEST
Staff of Software Engineering Academy — Apr 2023 – Nov 2023

- Recruited and collaborated with experienced software engineering professionals to serve as bootcamp speakers and project mentor.
- Facilitated mentor-student group pairings and ensured effective guidance throughout project development.
- Conducted candidate selection by interviewing applicants and assessing their technical projects.

SKILLS

Hard Skills

- **Programming Languages:** Python, Java, JavaScript, HTML/CSS, Dart, Go, Rust

- **Frameworks and Libraries:** Spring Boot, Django, Flutter, React, Vue.js, shadcn/ui
- **AI and Data Science:** PyTorch, Scikit-learn, Hugging Face Transformers, OpenSearch, Matplotlib, Pandas, NumPy
- **Databases and Tools:** PostgreSQL, OpenSearch, Figma, Jira, Microsoft Office Suite, Canva
- **DevOps and Software Development:** Cloud Computing Services (Google Cloud Platform), CI/CD (GitHub Actions), Containerization (Docker), System Designs (ERD, Class, Context, Sequence Diagrams), Monitoring and Observability (Datadog, Sentry, Google Analytics), Software Testing and Quality Assurance (SonarQube, JUnit, Jest, JaCoCo)

Soft Skills
Adaptability, Problem Solving, Collaboration, Communication, Attention to Detail, Critical Thinking

Languages
Indonesian (Native), English (Professional working proficiency)

PROJECTS

Talent Pool Web Application [Pitch Deck | Frontend Repo | Backend Repo | Talent's Side Web | Contractor's Side Web]
Full-Stack Developer | Spring Boot, PostgreSQL React, TypeScript, Vite, SonarQube, Datadog, Sentry, Google Analytics

- Partnered up with Rencanakan.id to design and build a scalable recruitment platform, streamlining the workflow between Talents and Contractors.
- Delivered features such as digital professional profiles, contractor-side candidate filtering, and WhatsApp integration.
- Applied Test-Driven Development (TDD), implemented secure coding practices, enforced code quality with SonarQube code analysis, and achieved 100% test coverage through unit and integration tests for production readiness.
- Designed reusable UI components using shadcn/ui, aligned with usability principles, and documented via Storybook.
- Integrated CI/CD pipelines with dev-staging-production workflows; implemented full monitoring and observability using Datadog (performance), Sentry (error and logging), Google Analytics (users' behavior), and custom metrics and alerting.
- Worked closely in a cross-functional team and published 10 technical articles covering software architecture, testing, design patterns, team collaboration, software best practices, and many more on medium.com/@ravieabud.

Credit Card Fraud Detection in Adversarial Environments [Report and Analysis Paper | Codes Repo]
Machine and Reinforcement Learning Researcher | Python, Scikit-learn, NumPy, Pandas, Matplotlib

- Built a hybrid fraud detection framework combining supervised and reinforcement learning to simulate dynamic adversarial behavior in credit card transactions.
- Developed a fraud environment modeled as a Markov Decision Process, where a fraudster agent (Monte Carlo and SARSA) interacts with a configurable classifier to maximize fraudulent gains.
- Trained multiple supervised classifiers on engineered features and integrated the best-performing model into a dynamic Reinforcement Learning simulation environment with adjustable detection thresholds.
- Conducted extensive experiments analyzing agent policy adaptation under static and dynamic threshold scenarios; showed that frequent threshold changes disrupt convergence and reduce fraud impact.
- Led a comparative study between Monte Carlo and SARSA agents, highlighting trade-offs in adaptability and learning stability under non-stationary conditions.

Multilingual Natural Language Inference with Large Transformer Models [Report and Analysis Slide | Codes Repo]
Machine and Deep Learning Researcher | PyTorch, Hugging Face Transformers, Scikit-learn, Pandas, NumPy, Matplotlib

- Engineered a complete PyTorch pipeline to fine-tune and evaluate encoder-only transformer models.
- Implemented advanced training strategies, such as gradient accumulation, AdamW optimizer with a cosine scheduler.
- Applied regularization techniques and early stopping to improve models' generalization and prevent overfitting.
- Conducted a rigorous ablation study on RemBERT model, demonstrating the critical role of Multi-Head Attention and Layer Normalization in contextual learning and training stability.
- Performed in-depth analysis using confusion matrices, error breakdowns, and t-SNE visualizations; authored a comprehensive report highlighting the effect of architectural and hyperparameter choices.

ESEMPEHA Search Engine [Full-Stack Repo | Web Demo Video]
Full-Stack Developer | Django, Tailwind CSS, OpenSearch, Docker, Large Language Models, Sentence Transformers

- Developed an advanced information retrieval system for scientific facts, built with Django and powered by OpenSearch, integrating both traditional keyword search and semantic search using sentence transformers.
- Implemented query correction, autocomplete, and AI-generated summaries using large language models.
- Engineered a custom domain-specific tokenizer and semantic embedding index to enhance scientific search accuracy.
- Designed a responsive frontend with Tailwind CSS and real-time UX enhancements (query correction and completion).
- Containerized system using Docker and implemented scalable architecture, suitable for research and deployment.