

GIOVAN CHRISTOFFEL SIHOMBING

AI / Machine Learning

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Professional Summary

Computer Engineering graduate with experience preparing data, developing models, and integrating AI into applications. Independently built and evaluated a federated learning system across physical devices, with additional experience in AI/ML research, computer-vision experimentation, and on-device model integration.

Technical Skills

- **AI/ML:** Data preparation, model training and evaluation, computer vision, federated learning, PyTorch, TensorFlow, scikit-learn, FedBioMed, Core ML, RAG, MLX.
- **Engineering:** Python, SQL, Swift, Node.js, PostgreSQL, Docker, Linux, Git, GCP.

Research Experience

Assistant Researcher (Part-time)

Monash University, Indonesia Campus

Tangerang, Indonesia

May 2026 – Present

- Develop Python and Google Cloud Storage workflows for chest X-ray dataset curation, DICOM preprocessing, image-report pairing, and multi-source metadata harmonization.
- Contribute to JAX/Flax NNX baseline and domain-shift experiments across TBX11K and CXR-RAIT; conduct a Google Cloud TPU reconstruction pilot using a 470-image cohort with fixed train/validation/test splits.
- Build inference tooling for a distilled CheXAgent vision-language model and integrate it into TB-Xdar via Replicate/Cog, supporting DICOM inputs and clinician-reviewed reporting workflows.

Federated Learning for Chest X-Ray Classification

Undergraduate Thesis / Individual Project

Aug 2025 – May 2026

- Independently developed a federated learning experiment pipeline for multi-label chest X-ray classification, covering data preparation, framework comparison, deployment, and evaluation.
- Adapted X-Raydar-CV for 38 outputs (37 findings and a meta-class), freezing the visual backbone and fine-tuning classifier heads; prepared model-assisted labels requiring expert clinical validation.
- Compared five frameworks in simulation; deployed only FedBioMed across five physical devices for 30 runs spanning FedAvg/FedProx, three resolutions, and five seeds.
- Built orchestration and researcher/operator dashboards for setup, registration, and monitoring; completed five rounds per run, totaling 750 successful client-round responses. The study does not establish patient-independent generalization or clinical readiness.

Industry Experience

AI Engineer Intern

Tripleize Co., Ltd.

Minato-ku, Japan

Feb 2026

- Investigated mathematical image-analysis and segmentation-model approaches for assessing food plating quality, including positioning and arrangement, without external AI APIs or large language models.
- Documented explored approaches, implementation observations, and limitations in an internship report.

Education

Bachelor of Engineering in Computer Engineering

Universitas Indonesia

Depok, Indonesia

Aug 2022 – Aug 2026

- GPA: 3.67/4.00. AEON 1% Club Scholarship recipient in 2024 and 2025.

Selected AI Application Projects

AniMagic

iOS Developer / AI and Application Systems

Jul 2026

- Built the sketch classifier and Core ML integration for a SwiftUI/PencilKit-to-AR team prototype; handled data preparation, model selection, training, and evaluation.
- Prepared 840,000 training examples from Google Quick, Draw! across 49 classes: 48 animal species and one aggregated non-animal class.
- Reached 85.14% overall top-1 across 49 classes including *other* on held-out Quick Draw data (24,500 examples per validation/test set), not PencilKit-user accuracy.

Lawtionary

macOS Developer / AI and Application Systems

Aug 2026 – Sep 2026

- Built local-first legal-draft review and terminology lookup in Swift/SwiftUI/AppKit; prepared the September 2026 corpus (2,982 term groups; 2,589 selected concepts).
- Integrated BM25/multilingual-E5 retrieval and local Qwen3.5 4B Base/MLX for candidate review, with source checks, output validation, fallback, and user-approved edits.
- Tested with students, corporate lawyers, and government legal personnel; prioritized Dictionary updates from student feedback and available development time.

Additional Experience

Laboratory Assistant / Laboratory Coordinator

Digital Laboratorium, Universitas Indonesia

Depok, Indonesia

Aug 2023 – Jan 2026

- Coordinated approximately 12 assistants and departmental administration for equipment, rooms, and assistant compensation.
- Built a Node.js/Docker e-library that remains in use; administered supporting Proxmox servers.

Data Labeler Intern

PT Cliste Rekayasa Indonesia

Jakarta, Indonesia

Oct 2025 – Dec 2025

- Annotated assets in complex Piping and Instrumentation Diagrams (P&ID) and prepared the resulting dataset for an object detection system supporting automated asset inventory.

Training and International Experience

Apple Developer Academy Learner

Apple Developer Academy @ UC

Jakarta, Indonesia

Feb 2026 – Present

- Explore opportunities, research users, design interfaces, and develop Apple-platform apps; now on a fifth team project, helping keep discussions focused and work aligned with timelines.

TWINCLE Exchange Program

Chiba University

Chiba, Japan

Dec 2025 – Feb 2026

- Received JASSO scholarship support and collaborated with international peers on a presentation about local food waste.

Leadership Experience

Vice President

EXERCISE FTUI, Universitas Indonesia

Depok, Indonesia

Jan 2024 – Jan 2025

- Coordinated six technical projects and seven workshops; organized an industry visit with XL Axiata's IoT division.

Selected Professional Development

- [AI for Medicine Specialization](#) – DeepLearning.AI / Coursera, 2026.
- [Deep Learning and Natural Language Processing](#) specializations – DeepLearning.AI / Coursera, 2025.

Languages

Indonesian (Native) | English (Professional) | Japanese (Conversational; JLPT N3, 2025)