

Gading Aditya Perdana

COMPUTER VISION / DEEP LEARNING / ON-DEVICE AI

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PROFILE

Computer vision researcher and engineer focused on efficient models and on-device medical imaging. Author of **five peer-reviewed publications, four as first author**. Experience spans training vision transformers from scratch in PyTorch, controlled experimentation, and integrating deep learning into native macOS applications.

EDUCATION

BINUS University

Aug. 2023 – Feb. 2027 (expected)

B.Sc. Computer Science, Intelligence Systems specialization

GPA: 3.63/4.00 | Expected completion in 3.5 years.

SELECTED RESEARCH & ENGINEERING

OccamViT: Compact Vision Transformers

Aug. 2025 – Present

First-author research project; manuscript in preparation

- Designed and trained an isotropic ViT family from scratch on ImageNet-1K: **80.2% top-1 at 6.8M parameters** (Tiny) and **82.1% at 11.9M** (Small), without knowledge distillation or additional training data.
- Used ablations calibrated against training variability to identify removable attention modules and the contributions of a three-stage convolutional trunk and depthwise feed-forward mixing within the evaluated architecture.
- Achieved **31.7% accuracy on ImageNet-A** without robustness-specific training. Audited evaluation protocols and identified inconsistencies that changed **17 of 78 ranking comparisons**. Implemented in pure PyTorch and trained on a single RTX 5090.

DALX: On-Device Chest Radiograph Measurement

Jul. – Aug. 2026

Native macOS application; medical imaging and model integration

- Built a SwiftUI application integrating **five local deep learning models**, including HybridGNet, CXAS, RAD-DINO, and MedGemma, for anatomical measurement of chest radiographs.
- Implemented local DICOM processing, automated contouring, and **DICOM SR/PDF export**; demonstrated the system at Garuda Spark Expo.
- Attracted interest from Universitas Indonesia's Faculty of Medicine, Occupational Medicine Division, in exploring clinical evaluation for occupational lung disease screening.

TECHNICAL SKILLS

Core: Python, PyTorch, NumPy, Pandas, OpenCV, Git, Weights & Biases.

Model development: Vision transformers, CNNs, object detection, knowledge distillation, model calibration, mixed precision, data preprocessing.

Research: Experimental design, ablation studies, statistical analysis, benchmark evaluation, technical writing.

Additional: TensorFlow/Keras, SQL, C, Java, JavaScript; Swift/SwiftUI and Core ML (developing proficiency); Docker (basic), DICOM.

EXPERIENCE

Apple Developer Academy Scholar

Feb. 2026 – Present

Apple Developer Academy @ BINUS | BSD City, Indonesia

- Selected for the 2026 cohort; develop native iOS/macOS applications using Swift, SwiftUI, and Core ML in cross-functional teams through Challenge-Based Learning.

Undergraduate Research Assistant

Jan. – Dec. 2025

BINUS University | Jakarta, Indonesia

- Led experimental design for bone fracture detection in X-ray images, resulting in a **first-author IEEE ISRITI 2025 publication**.
- Developed a Faster R-CNN detector with an EfficientNetV2-S backbone; compared FPN and PAFPN and evaluated cost-sensitive losses for class imbalance.
- Built preprocessing and training pipelines using AdamW, automatic mixed precision, and exponential moving average of model weights.

Freelance Software Developer & Independent Tutor

Aug. 2021 – Jan. 2026

Self-employed | Remote and Jakarta, Indonesia

- Delivered web applications and advised clients on computer vision research methodology while managing freelance work alongside university study.

ADDITIONAL RESEARCH

CALM: Calibrated Adaptive Learning

Feb. – May 2025

First-author research; published in Procedia Computer Science, ICCSCI 2025

- Developed an ensemble framework combining knowledge distillation, mutual learning, and calibration, with an adaptive curriculum for scheduling training objectives.
- Achieved **97.16% classification accuracy on CIFAR-10**; evaluated model confidence using expected calibration error.

SELECTED PUBLICATIONS

Five peer-reviewed publications, including four first-author papers. Full list: Google Scholar.

- **Perdana, G. A.**, et al. "Enhancing Bone Fracture Detection in X-ray Images Using Faster R-CNN with EfficientNetV2." *IEEE ISRITI*, 2025. First author.
- **Perdana, G. A.**, et al. "CALM: Calibrated Adaptive Learning via Mutual-Ensemble Fusion." *Procedia Computer Science (ICCSCI)*, 2025. First author.
- Nathen, A., **Perdana, G. A.**, et al. "Tiny vs. Tinier: Baseline ViT-Tiny vs. Ensemble-Distilled Student on Imbalanced Fracture Detection." *Procedia Computer Science (ICCSCI)*, 2025.

LEADERSHIP, TEACHING & HONORS

General Secretary & Board Member, Bagi Dunia (NGO)

Feb. 2024 – Present

Raised **Rp17M+** and secured **seven corporate sponsors**; managed **30+ volunteers** and coordinated food distribution for **100+ beneficiaries**.

Academic Tutor

Nov. 2023 – Dec. 2025

Taught statistics, discrete mathematics, computational physics, and linear algebra; organized technical bootcamps reaching **150+ students**.

Best Presenter Award, 10th ICCSCI, Semarang, Indonesia

Aug. 2025

Languages: Indonesian (native); English (professional proficiency).