Gading Aditya Perdana

+62 811920059 | gadingadityaperdana@gmail.com | linkedin.com/in/gadingadityaperdana | gadingadityap.vercel.app
Central Jakarta, Indonesia

Summary

An award-winning AI Researcher with four peer-reviewed publications (three as first author). My research pioneers robust and calibrated deep learning models, demonstrated in my "CALM" framework (ICCSCI 2025 Best Presenter), which achieved state-of-the-art results by introducing novel adaptive curriculum and mutual-ensemble learning protocols. I bridge the gap between theory and practice by architecting and deploying end-to-end intelligent systems across computer vision and NLP. This is underpinned by deep experience in Python (PyTorch, TensorFlow) and full-stack (React, C#/.NET, SQL), enabling the consistent translation of novel research into production-grade applications.

Education

Binus University | GPA: 3.52/4.00 — Jakarta, Indonesia
Bachelor of Science in Computer Science, Specialization in Intelligence Systems — *Aug. 2023 – Feb 2027*

Awards & Honors

Best Presenter Award — Semarang, Indonesia
The 10th International Conference on Computer Science and Computational Intelligence (ICCSCI) — *August 2025*

- Awarded for presenting the research papers "CALM: Calibrated Adaptive Learning..." and its corresponding ablation study. Distinguished as the top presenter for exceptional delivery and research clarity among all international conference speakers.

Publications

- **Perdana, G. A.**, Ghazali, M.A., *et al.* "CALM: Calibrated Adaptive Learning via Mutual-Ensemble Fusion." *Procedia Computer Science* (ICCSCI 2025). **First author; Scopus Q2**
- **Perdana, G. A.**, Kisdi, M.I.A*et al.* "Analytical Analysis of Cryptocurrency Regulation and Adoption: A Machine Learning-Driven Ablation Study." *Procedia Computer Science* (ICCSCI 2025). **First author; Scopus Q2**
- 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). **Second author; Scopus Q2**
- **Perdana, G. A.**, *et al.* "Ablation Study: Calibrated Adaptive Learning Ensemble Methodology." *Procedia Computer Science* (ICCSCI 2025). **First author; Scopus Q2**

Note: ICCSCI 2025 acceptance rate ≈23%

Experience

Undergraduate Research Assistant — Jan 2025 – Present
Binus University (Bina Nusantara University) — *Anggrek Campus, Jakarta*

- Prepared and curated the FracAtlas X-ray dataset (COCO annotations): preprocessing, train/validation partitioning, negative sampling, and augmentation pipeline design to mitigate severe class imbalance.
- Implemented and benchmarked Faster R-CNN with an EfficientNetV2-S backbone, comparing standard FPN vs Path-Aggregation FPN (PAFPN) necks and evaluating cost-sensitive loss to improve small-fracture detection.
- Engineered the training pipeline (AdamW, linear warmup, mixed precision, gradual unfreezing, EMA) and evaluation (TTA); ran ablation studies and ensemble/augmentation experiments to guide model selection.
- Helped author the camera-ready manuscript (methodology & experiments) and reported results showing a mAP@[.50:.95] improvement from 0.1658 (baseline) to 0.2016 (+21.6%) and AP50 up to 0.574, informing follow-up recommendations.

Application Developer Intern — Jul. 2024 – Aug. 2024
Otoritas Jasa Keuangan — *Jakarta, Indonesia*

- Implemented banking supervision features adhering to regulatory compliance; partnered with senior developers on code reviews and production system reliability.
- Optimized PostgreSQL data tables improving query efficiency; authored technical documentation reducing support tickets by streamlining onboarding processes.
- Contributed to sprint planning and architectural discussions with scalability recommendations; compiled comprehensive stakeholder report detailing key contributions.

Projects & Research

CALM: Calibrated Adaptive Learning via Mutual-Ensemble Fusion Feb. 2025 – May 2025

- Published pre-print in Procedia Computer Science (ICCSCI 2025) presenting CALM, a unified framework integrating ensemble distillation, mutual learning, and calibration losses for vision models.
- Proposed Adaptive Curriculum Protocol (ACP) to schedule learning objectives dynamically, and Heterogeneous Feature Integration (HFI) to fuse intermediate features from diverse teacher networks.
- On CIFAR-10, CALM achieved 97.16% top-1 accuracy and reduced Expected Calibration Error by up to 20%.
- On STL-10, CALM demonstrated strong generalization under minimal adaptation and achieved state-of-the-art accuracy (98.20%) and macro-F1 (0.9820) after post fine-tuning with recalibration.

Diabetic Retinopathy Detection Using CNN Sep. 2024 – Nov. 2024

- Engineered a desktop tool to analyze retinal scans, outputting disease-grade predictions with integrated Grad-CAM heatmaps for interpretability.
- Achieved 88% accuracy on the APTOS dataset by fine-tuning InceptionV3 with data augmentation and class-balanced sampling.

Logit-Fusion Ensemble for Garbage Classification Mar 2025 – May 2025

- Meta-student fusing EfficientNet-B0 + DenseNet121 via learned combiner with AKTP and ACP; improved balanced accuracy on 12-class dataset (15,515 images).

Activities

Chairperson of Secretary, Bagi Dunia (NGO) | Jakarta, Indonesia Feb. 2024 – Present

- Led financial operations and fundraising, raising Rp13.5M+ (±USD 800), exceeding targets by 25% through crowdfunding and securing seven new sponsorships.
- Recruited and managed 30+ volunteers; streamlined onboarding with SOPs, reducing setup overhead by 25%.
- Directed logistics for multi-day food drives across five sites, delivering 500+ aid packages to 100+ beneficiaries.
- Expanded NGO network by four partner organizations and boosted community engagement by 40% through targeted workshops.

Peer Tutor & Lecture Series Organizer Nov. 2023 – Present

Independent *Jakarta, Indonesia*

- Provided personalized tutoring in Statistics, Discrete Mathematics, and Linear Algebra to 15–20 peers weekly.
- Designed and delivered paid bootcamps on Algorithms, Statistics, and Linear Algebra, and free Computational Physics lectures to 150+ students via Discord.
- Managed full-cycle video production (scripting, recording, editing) to create high-quality educational content.

Certifications

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- FreeCodeCamp (2024–2025): Scientific Computing with Python; Responsive Web Design; JavaScript Algorithms & Data Structures (Legacy & Modern); Data Analysis with Python; Machine Learning with Python; College Algebra with Python.
- Kaggle Learn (2025): Computer Vision; Intro to ML; Intermediate ML; ML Explainability; Intro to Deep Learning; Data Visualization; Data Cleaning; Intro to AI Ethics.

Technical Skills

Languages: Python (Proficient), C++, JavaScript, Java, SQL
Deep Learning & Research: Adaptive Curriculum Protocols, Ensemble, Mutual Learning, Calibration Loss
Computer Vision & NLP: EfficientNet, ResNet, Vision Transformers, BERT, Grad-CAM, SHAP
Machine Learning: NumPy, Pandas, SciPy, Scikit-learn, Matplotlib, Plotly, OpenCV, XGBoost, LightGBM
Frameworks & Libraries: TensorFlow, PyTorch, Keras, FastAPI, Flask
Web Development: HTML, CSS, React, RESTful API Design
Developer Tools: Git, GitHub, Docker, MLflow, Weights & Biases, CI/CD Pipelines
Data Science & Analytics: Data Cleaning & EDA, Statistical Analysis, Imbalanced-class Sampling, A/B Testing
Soft Skills: Rapid Learning, Cross-functional Collaboration, Technical Writing & Documentation

Languages

English (Native)

Indonesian (Native)

German (Basic conversational)

Spanish (Basic conversational)