Gading Aditya Perdana

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Central Jakarta, Indonesia

Summary

Driven AI Research Engineer with a proven record in deep learning, computer vision, and NLP. Authored "CALM: Calibrated Adaptive Learning via Mutual-Ensemble Fusion," achieving 97%+ accuracy and state-of-the-art calibration on CIFAR-10/STL-10. Skilled in designing adaptive curricula, ensemble and mutual-learning protocols, and calibration losses, with hands-on experience from dataset curation to deployable React/Flask solutions. Rapidly masters new techniques and translates novel research into production-grade systems that deliver measurable impact.

Education

Binus University | GPA: 3.31/4.00 — Jakarta, Indonesia
Bachelor of Science in Computer Science, Specialization in Intelligence Systems — *Aug. 2023 – Feb 2027*

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 ≈30%

Experience

Undergraduate Research Assistant — Jan 2025 – Present
Binus University — *Anggrek Campus, Jakarta*

- Appointed as a research member under the Penelitian Pemula Binus, for the project "Development of an Automatic Diagnosis System Using Deep Learning for Bone Fracture Detection," supervised by Maulin Nasari, S.T., M.Kom.
- Prepared and curated the research dataset, ensuring high data quality and consistency for model training.
- Performed extensive data cleaning and exploratory analysis on the X-ray dataset, uncovering severe class imbalance and advising the acquisition of a more balanced dataset for reliable model training.
- Executed comparative experiments across Vision Transformer and CNN architectures with various ensemble strategies (bagging, boosting, stacking, majority voting), then synthesized and reported detailed findings to the research leader to inform next steps.

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 & Treasurer, 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 1,500+ aid packages to 600+ beneficiaries.
- Developed a live dashboard for real-time monitoring of donations, volunteer engagement, and aid distribution metrics.
- 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
Concepts: Data Structures & Algorithms, OOP, Agile/Scrum Methodologies
Soft Skills: Rapid Learning, Cross-functional Collaboration, Technical Writing & Documentation

Languages

English (Native)

Indonesian (Native)

German (Basic conversational)

Spanish (Basic conversational)