Agus Gunawan

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INTERESTS

Computer Vision, Generative Models
1) Controllable generative models, 2) Exploiting multimodal model priors.

EDUCATION

KAIST   Daejeon, South Korea
Ph.D. in Electrical Engineering.   *Aug. 2020 – Present*
Advisor: Munchurl Kim

Bandung Institute of Technology   Bandung, Indonesia
B.E. in Computer Science.   *Aug. 2015 – Jul. 2019*
Advisor: Dwi H. Widyantoro

PROJECT & RESEARCH

Diffusion-based Text Image Manipulation   Dec. 2024 – Present
Multi-modal, image editing, text-image editing.   *Research*

- **Agus Gunawan**, S. Teodoro*, Y. Chen, S.Y. Kim, J. Oh, M. Kim. **Under review**
  "OmniText: A Training-Free Generalist for Controllable Text Image Manipulation".

Diffusion-based Multi-Object Video Editing   Jan. 2024 – Jan. 2025
Multi-modal, video editing.   *Research*

- S. Teodoro*, **Agus Gunawan***, S. Y. Kim, J. Oh, M. Kim. **Under review**
  "PRIMEdit: Probability Redistribution for Instance-aware Multi-object Video Editing with Benchmark Dataset".

Various Colorization Methods   Dec. 2022 – Dec. 2024
Low-level vision, colorization, image representation, style transfer.   *Research*

- Exemplar-based Image Colorization via Local Photorealistic Style Transfer. **Internal Report**
- Any-scale Colorization using Implicit Representation. **Internal Report**
- Diffusion-based Conditional Image Colorization.

Old Photo Restoration & Modernization   Jul. 2021 – Nov. 2022
Low-level vision, in-the-wild image restoration, style transfer.   *Research*

- **Agus Gunawan**, S.Y. Kim, H. Sim, J. H. Lee, M. Kim. **CVPR 2023**
  "Modernizing Old Photos Using Multiple References via Photorealistic Style Transfer".
- **Agus Gunawan**, M. Kim. **KIBME 2024**
  "CCLNet: Cross Content Laplacian Network for Modernizing Cultural Heritage Images"

Deep Learning Exploration on Low-Level Vision   Jan. 2021 – Dec. 2021
Low-level vision, learning (meta-learning, test-time adaptation), normalization   *Research*

- **Agus Gunawan**, M. A. Nugroho, S. J. Park. **arXiv 2022**
  "Test-time Adaptation for Real Image Denoising via Meta-transfer Learning"
- **Agus Gunawan**, X. Yin, K. Zhang. **arXiv 2022**
  "Understanding and Improving Group Normalization"
- **Agus Gunawan**, S. R. H. Madjid. **arXiv 2022**
  "CISRNet: Compressed Image Super-Resolution Network"

Deep learning Exploration on Vision and NLP   Jan. 2018 – Dec. 2019
Object detection, tracking, re-identification, fake image detection, question answering system   *Research*

- **Agus Gunawan**, D. H. Widyantoro. **ICACSIS 2019**
  "Key Frame Extraction with Face Biometric Features in Multi-shot Human Re-identification System".
- **Agus Gunawan**, H. Lovenia, A. H. Pramudita. **ResearchGate 2018**
  "Fake Image Detection using ELA and Deep Learning".
- H. Lovenia, F. Limanta, **Agus Gunawan**. **ResearchGate 2018**
  "Automatic Question-Answer Pairs Generation from Text".

Work Experience

Machine Learning Engineer   May. 2020 – Jan. 2021
Sembly   *Remote, Singapore*
- Researched various vector index infrastructures for search
- Researched various search infrastructure
- Developed various search features in production

Software Engineer in Data Team   Oct. 2019 – Apr. 2020
Airy   *Jakarta, Indonesia*
- Created an event extraction system using text classification, NER, and relationship extraction
- Created and maintained machine learning infrastructure in AWS
- Created and maintained data science products in production
- Added features and maintained various data services in production

Artificial Intelligence Engineer Intern   Aug. 2019 – Oct. 2019
GLAIR   *Jakarta, Indonesia*
- Developed deep learning model for a recommendation system of sequence data

Machine Learning Engineer Intern   May. 2018 – Aug. 2018
Bukalapak   *Jakarta, Indonesia*
- Developed a Named Entity Recognition (NER) API used in production
- Developed a NER Tagger model for product title, description, and location

Academic Services

NIPS 2025. ICCV 2025. VCIP 2023. TPAMI. IJCV.

References

Available upon request.