JUNYOUNG KOH Deep Learning Engineer | AI Researcher

Email : arsol970812@gmail.com / Phone : +82 10 9921 6066 / Nationality : South Korea

Summary

- **Generative AI & Multimodal Research:** Researched generative AI and multimodal learning, developing Stable Diffusion-based models and personalized LoRA. Built prompt pipelines and optimized image generation.
- **Full-stack AI Development:** Managed full pipeline from data collection to model training and publication. Bridged research and deployment with cross-functional expertise.
- **Language Skill** : English(Fluent), Korean(Native), Japanese(Intermediate)

Career Path

KRAFTON, Seoul, South Korea

2025.08 ~ Current Deep Learning Div. / Ph.D. Intern

[Key Responsibilities]
- Developing Storyboard Image Generation Workflow

Onoma AI, Seoul, South Korea

2024.01 ~ 2025.02 AI Team / Lead
2023.09 ~ 2023.12 AI Team / Image Part Lead
2023.07 ~ 2023.08 AI Team / Image Part Researcher

[Key Responsibilities]
Developed SDXL-based generative illustration foundation model.
Built and augmented 20M+ illustration image dataset.
Planned CES 2024 & 2025 AI award-winning AI models.
Developed LoRA adapter models for unstructured image domains.
Designed prompt pipelines for robust text-image alignment.
Built automated character/story generation tools using GPT-4.
Led publications and workshops based on research outcomes.

[Achievements]
- Illustrious: SDXL-based illustration generator; released via HuggingFace, TensorArt, with MOUs. Collected 20M+ illustrations from Common Crawl; public model releases.
- TooToon Emporium: Character model marketplace with LoRA + VSA Tagger. Built AWS/SageMaker/Docker pipeline; partnered with 20+ companies incl. LG U+, Kenaz. Created 40+ character LoRA models used in webtoon/Instagram.
- TooToon Artifex: Line art generator with ControlNet/inpainting (ComfyUI/WebUI); Used by 50+ artists for webtoon production.
- TooToon Fabulator: LLM-based tool for auto synopsis/treatment/character sheets. Integrated chracter sheet → LoRA training pipeline.

Education

Yonsei University, South Korea
Integrated Master's and Ph.D. Student in Artificial Intelligence
2023.03 ~ Current

University of Southern California, USA
AI/Machine Learning Summer Session
2025.07 ~ 2025.08

Soongsil University, South Korea
Bachelor of Engineering in Global Media
2017.03 ~ 2023.02

Seoul High School, South Korea
2013.03 ~ 2016.02

Paper / Project

Yonsei University, Seoul

2023.09 ~ 2024.06 CAT : Contrastive Adapter Training for Personalized Image Generation (CVPR Workshop)
- Proposed Contrastive Adapter Training (CAT) to address object diversity loss and prior knowledge collapse in LoRA-based diffusion models
- Designed CAT loss to preserve base model knowledge during adapter application
- Introduced Knowledge Preservation Score (KPS) for performance evaluation

2024.06 ~ 2024.07 Improving Text Generation on Images with Synthetic Captions (IIAI-AAI 2024)
- Proposed a lightweight fine-tuning strategy to address blurry or inaccurate text generation in SDXL-based text-to-image models
- Applied a cost-efficient training method using refined datasets and synthetic captions, without relying on large multimodal encoders
- Improved text rendering accuracy through data augmentation with randomized character inclusion

2024.08 ~ 2025.02 Illustrious: an Open Advanced Illustration Model (Technical Report)
- Developed Illustrious, a text-to-image model specialized in animation-style image generation
- Proposed strategies to enhance high-resolution generation quality through large-batch training, high-res finetuning, and multi-level caption refinement
- Achieved SOTA performance in the illustration domain with plans for continued improvement and open-source customization

2025.05 ~ 2025.08 AIBA: Attention-based Instrument Band Alignment for Text-to-Audio Diffusion (NeurIPS AI4Music)
- Extraction of Frequency Instrument Band Alignment via Cross-Attention

(Ongoing) Multi-Pitch Estimation Model Based on Synthetic Polyphonic Vocal Data
- Development of a Multi-Pitch Estimation Model Based on Polyphonic Vocal Synthesis Data
- National Research Foundation of Korea Ph.D Research Fellowship Program funding KRW 25M (USD 20K) per year

2025.10 ~ 2026.01 Jamendo-MT-QA : A Benchmark for Multi-Track Comparative Music Question Answering (EACL NLP4MUSA, ACL 2026 Conference)
- Multi-Track Question Answering Dataset using LLM with Human Alignment
- Benchmark for Multi-Track Question Answering Dataset

Fundings / Awards

- CES 2024 - 2025 Innovation Award (AI Category)
- National Research Foundation of Korea Ph.D. Research Fellowship (No. RS-2025-25422688 · USD 20K)
- Brian Impact Foundation (Kakao) Research funding (USD 1.5K per paper)