Sunghyun **Park**

AI Researcher

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Research Interest

Personalization of Generative AI, Image and Video Synthesis, Computer Vision

Work Experience

Qualcomm AI Research — *Seoul, S.Korea*
Senior Engineer — *Dec. 2023 - Current*
- Personalization of Generative AI

Qualcomm AI Research — *Seoul, S.Korea*
Research Intern — *Aug. 2022 - Aug. 2023.*
- Test-Time Adaptation, Label Shift, Long-Tailed Classification

Kakao Enterprise — *Pangyo, S.Korea*
Membership Program — *Jul. 2021 - Dec. 2021.*
- Long-Tailed Classification, Scene Text Recognition

Kakao Enterprise — *Pangyo, S.Korea*
Research Intern — *Mar. 2021 - Jun. 2021*
- Long-Tailed Classification, Scene Text Recognition

Data and Visual Analytics Lab, Korea University — *Seoul, S.Korea*
Undergraduate Researcher — *Jul. 2018 - Aug. 2019*
- Hurricane tracking
- Polyp detection with SSD (Single Shot Multi-box Detector)
- Brain stroke onset time classification with ResNet-3D model

Daumsoft — *Seoul, S.Korea*
Intern — *Jan. 2018 - Feb. 2018*
- Instagram data analysis with object detection and clustering

Education

Integrated Ph. D. in Artificial Intelligence — *Gyeonggido, S.Korea*
Korea Advanced Institute of Science and Techonology (KAIST) — *Mar. 2020 - Feb. 2024*
- Advisor: Prof. Jaegul Choo

M.S. in Artificial Intelligence — *Seoul, S.Korea*
Korea University — *Sep. 2019 - Feb. 2020*
- Advisor: Prof. Jaegul Choo

B.S. in Computer Science — *Seoul, S.Korea*
Korea University — *Mar. 2013 - Aug. 2019*

Publications

Conference Papers

C1 S. Kim*, ***S. Park****, S. Chung*, J. Lee, Y. Lee, H. Kim, Mr Prabhat, and J. Choo. “Learning to Focus and Track Extreme Climate Events”
British Machine Vision Conference (BMVC), 2019, Cardiff, UK, Accepted as Spotlight

C2 ***S. Park****, and S. Choi. “PP-VTON: Pose-Preserving Image-based Virtual Try-On Network”
Korea Software Congress (KSC), 2019, Pyeongchang, South Korea

C3 ***S. Park****, K. Kim*, J. Lee, J. Choo, J. Lee, S. Kim, and E. Choi. “Vid-ODE: Continuous-Time Video Generation with Neural Ordinary Differential Equation”
AAAI Conference on Artificial Intelligence (AAAI), 2021, Virtual, Accepted

C4 ***S. Park****, S. Choi*, M. Lee*, and J. Choo. “VITON-HD: High-Resolution Virtual Try-On via Misalignment-Aware Normalization”
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021, Virtual, Accepted

C5 ***S. Park****, T. Kim*, C. Chung*, G. Gu, K. Nam, W. Choe, J. Lee and J. Choo. “K-Hairstyle: A Large-scale Korean Hairstyle Dataset for Virtual Hair Editing and Hairstyle Classification”
IEEE International Conference on Image Processing (ICIP), 2021, Anchorage, USA, Accepted

C6 K. Kim*, ***S. Park****, J. Lee, J. Lee, S. Kim, J. Choo, and E. Choi. “Continuous-Time Video Generation via Learning Motion Dynamics with Neural ODE”
British Machine Vision Conference (BMVC), 2021, Virtual, Accepted

C7 J. Lee*, J. Yun*, ***S. Park***, Y. Kim, and J. Choo. “Improving Face Recognition with Large Age Gaps by Learning to Distinguish Children”
British Machine Vision Conference (BMVC), 2021, Virtual, Accepted

C8 C. Chung*, T. Kim*, H. Nam*, S. Choi, G. Gu, ***S. Park***, and J. Choo. “HairFIT: Pose-invariant Hairstyle Transfer via Flow-based Hair Alignment and Semantic-region-aware Inpainting”
British Machine Vision Conference (BMVC), 2021, Virtual, Accepted as Oral Presentation

C9 K. Kim*, ***S. Park****, J. Lee*, S. Chung, J. Lee, and J. Choo. “AnimeCeleb: Large-Scale Animation CelebHeads Dataset for Head Reenactment”
European Conference on Computer Vision (ECCV), 2022, Tel Aviv, Accepted

C10 S. Lee*, G, Gu*, ***S. Park***, S. Choi, and J. Choo. “High-Resolution Virtual Try-On with Misalignment and Occlusion-Handled Conditions”
European Conference on Computer Vision (ECCV), 2022, Tel Aviv, Accepted

C11 C. Chung*, T. Kim*, Y. Kim*, ***S. Park***, K. Kim, and J. Choo. “Style Your Hair: Latent Optimization for Pose-Invariant Hairstyle Transfer via Local-Style-Aware Hair Alignment”
European Conference on Computer Vision (ECCV), 2022, Tel Aviv, Accepted

C12 ***S. Park***, S. Yang, J. Choo, and S. Yun. “Label Shift Adapter for Test-Time Adaptation under Covariate and Label Shifts”
International Conference on Computer Vision (ICCV), 2023, Paris, Accepted.

C13 D. Kim, ***S. Park***, and J. Choo. “When Model Meets New Normals: Test-time Adaptation for Unsupervised Time-series Anomaly Detection”
AAAI Conference on Artificial Intelligence (AAAI), 2024, Vancouver, Accepted.

C14 J. Cho*, ***S. Park****, H.Park, H.Park, S.Yang, and S. Yun. “Balanced Learning for Multi-Domain Long-tailed Speaker Recognition”
IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2024, Seoul, Accepted

C15 T. Kang*, J. Oh*, J. Lee, ***S. Park***, and J. Choo. “Expression Domain Translation Network for Cross-domain Head Reenactment”
IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2024, Seoul, Accepted

C16 J. Kim, G. Gu, M. Park, ***S. Park***, and J. Choo. “StableVITON: Learning Semantic Correspondence with Latent Diffusion Model for Virtual Try-On”
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024, Seattle, Accepted

C17 C. Chung, ***S. Park***, J. Kim, and J. Choo. “What to Preserve and What to Transfer: Faithful, Identity-Preserving Diffusion-based Hairstyle Transfer”
AAAI Conference on Artificial Intelligence (AAAI), 2025, Philadelphia, Accepted

C18 J. Kim, H. Jin, ***S. Park***, and J. Choo. “PromptDresser: Improving the Quality and Controllability of Virtual Try-On via Generative Textual Prompt and Prompt-aware Mask”
International Conference on Computer Vision (ICCV), 2025, Honolulu, Hawaii, Accepted.

C19 ***S. Park****, J. Lee*, S. Borse, M. Hayat, S. Choi, K. Hwang and F. Porikli. “Understanding Personal Concept in Open-Vocabulary Semantic Segmentation”
International Conference on Computer Vision (ICCV), 2025, Honolulu, Hawaii, Accepted.

C20 ***S. Park****, S. Choi*, H. Park and S. Yun. “Steering Guidance for Personalized Text-to-Image Diffusion Models”
International Conference on Computer Vision (ICCV), 2025, Honolulu, Hawaii, Accepted.

C21 S. Borse, S. Choi, ***S. Park***, J. Kim, S. Kadambi, R. Garrepalli, S. Yun, M. Hayat, and F. Porikil. “MultiHuman-Testbench: Benchmarking Image Generation for Multiple Humans”
Neural Information Processing Systems (NeurIPS), 2025, San Diego, Accepted.

C22 ***S. Park****, J. Kim*, H. Park, D. Das, S. Yun, M. Hayat, J. Choo, F. Porikli, and S. Choi. “Memory-Efficient Fine-tuning Diffusion Transformer via Dynamic Patch Sampling and Block Skipping”
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2026, Denver, Accepted.

C23 M. Park, ***S. Park***, J. Lee, H. Park, K. Hwang, F. Porikli, J. Choo, and S. Choi. “Concept-Aware LoRA for Domain-Aligned Segmentation Dataset Generation”
IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2026, Denver, Accepted.

Workshop Papers

W1 S. Kim*, ***S. Park****, S. Chung*, J. Lee, Y. Lee, H. Kim, Mr Prabhat, and J. Choo. “Focus and track: pixel-wise spatio-temporal hurricane tracking”
ICML 2019 Workshop Climate Change: How Can AI Help?, 2019, California, USA

W2 S. Kim*, ***S. Park****, S. Chung*, J. Lee, Y. Lee, H. Kim, Mr Prabhat, and J. Choo. “Learning to Focus and Track Hurricanes ”
NIPS 2019 Workshop Tackling Climate Change with Machine Learning, 2019, Vancouver, Canada

W3 ***S. Park****, K. Kim*, S. Kim*, J. Lee, J. Lee, J. Lee, and J. Choo. “Hurricane Nowcasting with Irregular Time-step using Neural-ODE and Video Prediction”
ICLR 2020 Workshop Tackling Climate Change with Machine Learning, 2020, Virtual, Accepted as Spotlight

W4 K. Kim, ***S. Park***, J. Lee, and J. Choo. “Reference-based Image Composition with Sketch via Structure-aware Diffusion Model”
CVPR 2023 Workshop on AI for Content Creation, 2023, Vancouver, Canada

W5 S. Choi*, ***S. Park****, H. Park, J. Kim, and S. Yun. “Mix-Opt: Mixed Optimization for Memory-Efficient Personalization of Text-to-Image Diffusion Models”
ICCV 2025 LIMIT Workshop, 2025, Honolulu, Hawaii, Accepted as Best Paper.

Preprints

P1 ***S. Park****, S. Chung*, J. Lee, and J. Choo. “Improving Scene Text Recognition for Character-Level Long-Tailed Distribution” **Arxiv**

P2 J. Lee*, T. Kim*, ***S. Park***, Y. Lee, and J. Choo. “RobustSwap: A Simple yet Robust Face Swapping Model against Attribute Leakage” **Arxiv**

P3 M. Park, ***S. Park***, J. Yun, and J. Choo. “Unlocking the Potential of Generated Datasets in Name-only Transfer of Vision-Language Models” **Arxiv**

Under Review

U1 J. Kim, ***S. Park***, H. Park, S. Yun, J. Choo, and S. Choi. “From Wardrobe to Canvas: Wardrobe Polyptych LoRA for Part-level Controllable Human Image Generation” **Under review**

Teaching Experience

AI Workshop Instructor

- **YearDream School**, instructing Computer Vision, Oct. 2023
- **KAIST ML Engineer BootCamp**, instructing Machine Learning, Computer Vision, Sep. 2023 - Oct. 2023
- **KAIST ML Engineer BootCamp**, instructing Machine Learning, Computer Vision, May. 2022 - Jun. 2022
- **ISEF Mentor**, instructing Virtual Try-On, Feb. 2022. - Apr. 2022
- **FastCampus**, (The RED) instructing GAN, Nov. 2021.
- **SAIT**, (ML / DL Action Learning) instructing Computer Vision, Sep. 2021 - Oct. 2021.
- **SK Telecom**, (Big Tech Academy, AI Course) instructing Computer Vision, Sep. 2021.
- **Global Startup Academy**, instructing Computer Vision & Kaggle Competition, Dec. 2020 - Feb. 2021.
- **SK Telecom**, instructing Image generation, Sep. 2020.
- **Samsung DS KAIST** (AI Expert Program), instructing Image-to-Image translation, Oct. 2020.
- **Samsung DS KAIST** (AI Expert Program), instructing NLP, Oct. 2019.
- **Samsung DS KAIST** (AI Expert Program), instructing Computer Vision, Aug. 2019.

Teaching Assistant

- **[AI618] Generative Model and Unsupervised Learning**, Sep. 2023 - Dec. 2023.
- **[AI599] Special Topics in Machine Learning : Deep Learning and Real-world Applications**, Mar. 2022 - Jun. 2022.
- **[AI604] Deep Learning for Computer Vision**, Sep. 2021 - Dec. 2021.
- **[AI604] Deep Learning for Computer Vision**, Sep. 2020 - Dec. 2020.
- **[AI602] Advanced Deep Learning**, Mar. 2020 - Jun. 2020.

Grant and Award

Award

- 2017 Qualcomm Innovation Award, Mar. 2018.
- Microsoft AI for Earth (ICLR Workshop Paper **[W3]**), May. 2020.
- 2021 Qualcomm Innovation Fellowship (AAAI Paper **[C3]**), Nov. 2021.
- 2021 Korean Artificial Intelligence Association, Best Paper Award (BMVC Paper **[C8]**).
- 2022 Korean Artificial Intelligence Association, Best Paper Award (ECCV Paper **[C9]**)

Skills

Programming Language

- Fluent in deep learning frameworks, particularly on **Pytorch**.
- Fluent in Python.
- Intermediate in HTML, JavaScript, Vue.js, and Blender (3D).
- Deep understanding in ML and Visualization libraries: OpenCV, Scikit-Learn, Matplotlib, and Seaborn.
- **Personal Github link: https://github.com/psh01087**

References

Jaegul Choo — *Associate Professor*
JCHOO@KAIST.AC.KR — *KAIST*

Joonseok Lee — *Associate Professor*
JOONSEOK2010@GMAIL.COM — *Seoul National University*

Edward Yoonjae Choi — *Associate Professor*
EDWARDCHOI@KAIST.AC.KR — *KAIST*

Sungrack Yun — *Principal Engineer*
SUNGRACK@QTI.QUALCOMM.COM — *Qualcomm AI Research*

Sungha Choi — *Senior Staff Engineer*
SUNGHAC@QTI.QUALCOMM.COM — *Qualcomm AI Research*