Changho Choi

Seoul, Republic of Korea

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Personal Profile

Computer Science undergraduate at Korea University specializing in computer vision and generative models, with 6+ years of applied machine learning experience in vision and audio. Actively seeking PhD opportunities in computer vision and general machine learning.

Education

Korea University   *Seoul, Republic of Korea*
Undergraduate   *Mar 2017 - Aug 2026*
- Major in Computer Science and Engineering
- Leave of absence for mandatory alternative military service (Nov 2021 – Oct 2024).

Gyeonggi Science High School   *Gyeonggi-do, Republic of Korea*
Graduated   *Feb 2014 - Feb 2017*
- Graduation thesis, "Eye Blinking Signal-Based Biometrics for Individual Identification Using Convolutional Neural Networks"

Research Experience

Vision & AI Lab   *Seoul, Republic of Korea*
Undergraduate Researcher   *Mar 2025 - Dec 2025*
- Conducted research on causal sequential visual encoders under Prof. Jinkyu Kim.
- Proposed MambaEye, a size-agnostic visual encoder that treats image recognition as a causal, sequential process, effectively mimicking human saccadic vision.

Publications

MambaEye: A Size-Agnostic Visual Encoder with Causal Sequential Processing
  Changho Choi, Minho Kim, Jinkyu Kim
  Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Findings, 2026

SAO-Instruct: Free-form Audio Editing using Natural Language Instructions
  Michael Ungersböck, Florian Grötschla, Luca A Lanzendörfer, June Young Yi, Changho Choi, Roger Wattenhofer
  Poster presented at NeurIPS, 2025

LatentSwap: An Efficient Latent Code Mapping Framework for Face Swapping
  Changho Choi*, Minho Kim*, Junhyeok Lee, Younggeun Kim, Hyoung-Kyu Song, Seungryong Kim
  Arxiv Preprint, 2024

Work Experience

OptimizerAI   *Seoul, Republic of Korea*
AI Researcher   *Oct 2024 - Dec 2024*
- Contributed to research and development for the Text-to-SFX Model v2.
- Achieved a 62% human preference win rate, significantly surpassing ElevenLabs (25%) and the leading open-source model (13%).
- Attained a superior overall quality and diversity score of 7.67, beating the next-best competitor's score of 5.29.
- Performed literature reviews, data preprocessing, neural audio codec, and audio generation model training as part of the version 2 development process.

Pion Corporation   *Seoul, Republic of Korea*
AI Engineer   *Jun 2023 - Oct 2024*
- Developed a deep learning model, trained on in-service user behavior data, to recommend optimal product images, which replaced a legacy rule-based system and improved selection efficiency.
- Enhanced online product image clustering by integrating CLIP with advanced deep learning algorithms, utilizing Triton Inference Server and TensorRT for optimized performance.
- Created an API server using Beeble AI and ThreeJS for transforming images into relighted videos via FastAPI.

Maum.AI   *Gyonggi-do, Republic of Korea*
AI Scientist   *Mar 2019 - May 2023*
- Experienced various computer vision tasks such as Super Resolution, JPEG noise restoration, Video Frame Interpolation, Face Swapping, Face Generation and Virtual Try-On through extensive literature review, utilization of open-source resources, and paper implementation.
- Contributed to two open-source projects resulted from research conducted for the company's products.
- Co-authored a research paper in collaboration with colleagues from the company's industrial project
- Led the computer vision research team, shaping research directions and managing the recruitment process.

Open-Source Projects

LatentSwap   *Stars: 25*
`https://github.com/usingcolor/LatentSwap`   *Mar 2025*
- Official PyTorch implementation for LatentSwap

HifiFace   *Stars: 300+*
`https://github.com/mindslab-ai/hififace`   *Dec 2021*
- Developed an unofficial PyTorch implementation of HifiFace, the state-of-the-art face swapping model at the time.

FaceShifter   *Stars: 600+*
`https://github.com/mindslab-ai/faceshifter`   *Oct 2020*
- Implemented FaceShifter, one of the first GAN-based face swapping models, from scratch in PyTorch.

Honors and Awards

ElevenLabs Worldwide Hackathon, Seoul
1st Prize   *Feb 2025*
- Voice Guardian:AI voice-based home protection system. Team members: Yooji Kwon, Jaemin Kim, Junyoung Lee, and Changho Choi.

Science Talent Scholarship
Full tuition scholarship awarded to selected students, Korea University   *Feb 2017*
- Part of SW-Centered University Project.