Hayeon Kim

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EDUCATION

- **M.S. in Seoul National University** — Seoul, Korea
  Department of Electrical and Computer Engineering — *Mar 2023 – Present*
  Major: *Multimodal Generative AI (Text, Image, 3D), High- Dimensional Generative AI ($\geq$8K images, Video, 3D, 4D)*

- **B.S. in Seoul National University** — Seoul, Korea
  Department of Electrical and Computer Engineering — *Mar 2018 – 2023*
  Courses: *Computer Architecture, Data Structures, Algorithms, Digital System Design, Machine Learning*

- **Incheon Science High School** — Incheon, Korea
  Specialized high school for gifted students in math and science (1 year early graduation) — *Mar 2016 – Feb 2018*

PUBLICATION

- **(ECCV 2024) BeyondScene: Higher-Resolution Human-Centric Scene Generation With Pretrained Diffusion**
  G. Kim.*, <u>H. Kim.</u>*, H. Seo*, D. Kang*, SY. Chun
  : Paper, Homepage Code Result

- **(ECCV 2024) Contribution-based Low-Rank Adaptation with Pre-training Model for Real Image Restoration**
  D. Park., <u>H. Kim.</u>, SY. Chun
  : Paper, Homepage

- **(ArXiv 2023) DITTO-NeRF: Diffusion-based Iterative Text To Omni-directional 3D Model**
  H. Seo.*, <u>H. Kim.</u>*, G. Kim*, SY. Chun
  : Paper, Homepage, Code

  * denoted for equal contribution

WORK EXPERIENCE

- **BlueSignum Inc.**
  Developer (iOS), Product Manager — *Jan 2021 – Dec 2021*
  - **DailyBean App development**: Developed the entire app and refactored data structure using clean architecture.
    - Impact - The App "DailyBean" is selected as the App of the day in the global AppStore
  - **App maintanence**: With the Firebase and BigQuery, sorted user's data selectively and used it on debugging & marketing.
  - **Your Counseling Center App Product management**: Created main story & constructed app's detailed feature.

- **Beyond Limit – Samsung Industrial Research Project**
  Student Researcher - Developer (Python) — *Feb 2021 – Nov 2021*
  - **Develop Variational quantum linear solver**: Improvement in Variational Quantum Algorithms by measurement simplification using Python & Mathematica
  - **Refactoring naive quantum simulator**: Refactoring the whole structure of naive quantum simulator by using Python `simplify` library

ADDITIONAL EXPERIENCE

- **XCORPS – Practical Issue Research Contest**
  Machine Learning Develop, Report, Presentation — *Jun 2020 – Nov 2020*
  - **Speech Split**: Developed specific code to decomposed the input speech into pitch, identity, rhythm and content using PyTorch, and optimized them for voice personalization.
  - **CycleGAN Voice Conversion**: Trained the model to synthesize two different voice domains and differentiate individual voices.
  - **Creating Homepage**: Designed the overall homepage and implemented responsive website with JavaScript, HTML and CSS5

- **Metaverse Developer Competition – Ministry of Science and ICT**
  iOS App development, report, presentation — *Aug 2022 – Sep 2022*
  - **vocAR App development**: Developed and designed the whole mobile application using AR, MobileNet v2, text recognition technologies

EXTRA CURRICULUM ACTIVITY

- **Student Mentor**: Coached in a special program for physics in Incheon Science High School — *Sep 2019*

- **Writing a journal** : Wrote an article in *ECELife*, a quarterly-issued journal of the department of Electrical and Computer Engineering, "Together with Research and Friendship–XCORPS contest challenge" — *Sep 2021*

Skills Summary

- **Languages**:   Python, Swift, C++, Matlab, C, HTML, LaTeX
- **Frameworks**:   PyTorch, SwiftUI, UIKit, CoreML, ARKit

Honors and Awards

- Grand Prize at R&E competition in Korea Foundation for the Advancement of Science and Creativity   *May 2017*
- Excellence Awards at XCORPS competition in Practical Issue Research   *Nov 2020*
- Excellence Awards at Engineering Department Creative Design Fair in SNU   *Sep 2022*
- Excellence Awards at Metaverse Developer Competition   *Oct 2022*