

Donghee Hong

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Research Interests

Visual analytics, parameter optimization, Human-in-the-Loop systems, user-centered design, human-AI collaboration

Education

Sungkyunkwan University (SKKU)

Suwon, Korea

M.S. IN ARTIFICIAL INTELLIGENCE (EXPECTED FEBRUARY 2026)

Mar 2024 - Present

- Cumulative GPA: 4.5/4.5

Sungkyunkwan University

Suwon, Korea

B.S. IN COMPUTER SCIENCE AND ENGINEERING

Mar 2020 - Feb 2024

- Cumulative GPA: 4.35/4.5 (98.5%), Major GPA: 4.38/4.5
- Graduated Summa Cum Laude, Class Rank: 2/160

Research Experience

Interactive Data Computing Laboratory (IDCLab), SKKU

Suwon, Korea

RESEARCH ASSISTANT (ADVISER: PROF. JAEMIN JO)

Aug 2022 - Present

- Led, as first author, the development of **HyPockeTuner**, a mobile interactive HPO system featuring EventCrumb, a novel event sequence visualization tailored for smartphones that unified HPO progress, user interventions, and outcomes on a single timeline
- Led research as first author on **Symetra**, a visualization system for analyzing hyperparameters and their impact on symbolic execution engines, and collaborated with domain experts in software testing
- Conducted multiple user studies including formative studies (N=8), case studies with domain experts (N=4), expert interviews (N=2), and controlled lab studies (N=12) to evaluate system designs and inform iterative development
- **SAE Feature Visualization** (Sep 2025–Present): Contributed to the development of a web-based interactive dashboard and visualizations for the analysis of Sparse Autoencoder (SAE) features in a neural network interpretability project

Data-driven AI Security HCI (DASH) Laboratory, SKKU

Suwon, Korea

RESEARCH ASSISTANT (ADVISER: PROF. SIMON SUNG-IL WOO)

Dec 2020 - Jun 2022

- Participated in various real-world application projects and contributed to the construction of large-scale datasets
- Notably, contributed to the development of a model for detecting fake faces, regardless of mask usage

Publications

UNDER REVIEW

- [6] **Hong, D.**, Lee, B., Seo, J., & Jo, J. (under review at CHI). HyPockeTuner: Enabling Mobile Hyperparameter Optimization through a Novel Event Sequence Visualization.
- [5] **Hong, D.**, Kim, M., Cha, S., & Jo, J. (under review at IEEE PacificVis). Symetra: Visual Analytics for the Parameter Tuning Process of Symbolic Execution Engines.

PUBLISHED

- [4] **Hong, D.**, Kim, M., Cha, S., & Jo, J. (2025). Symetra: Visual Analytics for Tuning Symbolic Execution Engines. *IEEE VIS (Poster)*.
- [3] Park, S., Park, J., & **Hong, D.** (2024). A System for Generating Image Prompts Using Large Language Models for Wheelchair Spoke Guard Design. *Proceedings of the Korean Computer Science Society Conference*, 918–920.
- [2] Lee, S., Ko, D., Park, J., Shin, S., **Hong, D.**, & Woo, S. S. (2022, May). Deepfake Detection for Fake Images with Facemasks. *Proceedings of the 1st Workshop on Security Implications of Deepfakes and Cheapfakes*, 27–30.
- [1] An, J., Kim, J., Lee, H., Kim, J., Kang, J., Shin, S., Kim, M., **Hong, D.**, & Woo, S. S. (2021, December). VFP290k: A Large-Scale Benchmark Dataset for Vision-Based Fallen Person Detection. *The Thirty-Fifth Conference on Neural Information Processing Systems Datasets and Benchmarks Track (Round 2)*.

Presentation

Hong, D. (2024, Oct). ViSTrics: A visual analytics tool for software testing. Korean Visualization Workshop (K-VIS), Seoul, Korea.

Selected Projects

PediaViz: Interactive Timeline Dashboard for Pediatric Medication and Test Analysis

IDCLAB, SKKU COLLABORATING WITH SEOUL NATIONAL UNIVERSITY HOSPITAL & NAVER CORPORATION Feb 2024 - Present

- Integrating natural language diagnostic data into the system, creating a multimodal system that seamlessly combines structured clinical measurements with unstructured textual assessments for comprehensive patient analysis
- Designed and implemented a web-based interactive dashboard that synchronizes patient growth records, lab results, and medication history on a unified timeline
- Built custom visualization components to help pediatricians identify patterns and correlations between treatments and test results

Spokeguard Design Assistant for Young Wheelchair Users

CO-DEEP LEARNING PROJECT, SKKU Sep 2023 - Dec 2023

- Developed an AI model that converts Korean design descriptions into appropriate image-generation prompts for young wheelchair users
- Addressed the accessibility gap for children with disabilities by eliminating the need for complex English prompts in text-to-image platforms

License Plate Recognition Mobile Application

UNDERGRADUATE RESEARCH PROGRAM (URP), SKKU Jan 2021 - Sep 2021

- Built end-to-end pipeline from dataset construction and model training to mobile application deployment
- Published on Google Play Store with 1,000+ downloads

Teaching Experience

TEACHING ASSISTANT

Introduction to Human-Computer Interaction (Fall 2024, Fall 2025); Information Visualization (Spring 2025); Problem Solving (Fall 2025); Computer Programming for Engineers (Spring 2023, Spring 2025); Python Programming Orientation for Freshmen (2021-2023)

TUTORING AND MENTORING

SKKU Peer Tutoring Program (Spring 2021); SKKU Software Mentoring Program (2020-2021)

Awards and Honors

SCHOLARSHIPS

Graduate Scholarship, SBS CULTURAL FOUNDATION Sep 2024 - Feb 2026

- Full tuition and annual stipend of \$8,225
- Around 15 students selected nationwide (acceptance rate: 4%)

Graduate Scholarship, DAESANG FOUNDATION Mar 2024 - Jun 2024

- Stipend of \$4,800 per semester

The Presidential Science Scholarship, KOREA STUDENT AID FOUNDATION Mar 2022 - Dec 2023

- Full tuition and annual stipend of \$3,500
- Approximately 150 students selected nationwide

SKKU Software Scholarship, SKKU Mar 2020 - Dec 2022

- Full tuition for two years (contingent on maintaining an overall GPA above 3.5)

Additional Internal Scholarships, SKKU

- Extracurricular Challenge Scholarship (2023); Student Success-Leadership Scholarship (2021, 2022); Department Recommendation Scholarship (Fall 2021)

AWARDS

Grand Prize, Co-Deep Learning Project Competition, SKKU

Dec 2023

- Ranked top 2 out of 16 teams

Participation Award, SW-Centered College AI Competition, SW-CENTERED UNIVERSITY ASSOCIATION

Dec 2023

- Ranked top 8 out of 194 teams

Dean's List Award, College of Computing and Informatics, SKKU

Spring & Fall 2020, Fall 2021

Leadership and Extracurricular Activities

SKKU-BA-DIVE Program

London, UK

TEAM LEADER

Jan 2023

- Led field research and interviews with industry professionals in IT and AI

Uni-DTHON Competition

Seoul, Korea

DATA-THON TRACK LEADER

Dec 2021 - Dec 2022

- Coordinated AI competition planning across six major universities in South Korea, designing competition problems and implementing leaderboard evaluation

Student Council, College of Computing and Informatics

Suwon, Korea

VICE PRESIDENT

Nov 2021 - Nov 2022

- Organized in-person academic events and facilitated communication between students, faculty, and partner universities

University Student Council Joint Committee

Seoul, Korea

COLLEGE REPRESENTATIVE

Nov 2021 - Nov 2022

- Represented the College of Computing and Informatics to discuss and decide on university development issues

Global Challenge Program

Silicon Valley, USA

DEPUTY TEAM LEADER

Jun 2022

- Conducted field research and interviews with IT professionals

Community Service

Suwon, Korea

VOLUNTEER

2020 -2024

- Over 100 hours of community service

Technical Skills

Research Methods

Semi-structured interviews, Thematic Analysis, Case Studies, Controlled Lab Studies, Formative Studies

Programming

TypeScript and JavaScript (Advanced, 3+ years production experience), Python (Advanced), Java, C and C++

Visualization & Frontend

D3.js & visx (Advanced, custom interactive visualizations), React (Advanced), Tailwind CSS, HTML/CSS

Data Analysis & Backend

Pandas, NumPy, Scikit-learn, FastAPI

Tools

Git, Figma, LaTeX, Adobe Premiere Pro