

HOJUN CHOI

AI Researcher, KIM JAECHUL GRADUATE SCHOOL OF ARTIFICIAL INTELLIGENCE, KAIST

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Research Interests

Computer Vision

Machine Learning

Model Compression

LLMs

Tech Stack

Programming Languages

Python | C | R | SQL

Frameworks

PyTorch | TensorFlow

Education

The Kim Jaechul Graduate School of AI at Korea Advanced Institute of Science and Technology

Madison, WI

M.S IN ARTIFICIAL INTELLIGENCE

Jan. 2024 - May. 2025

• GPA: N/A

University of Wisconsin-Madison

Madison, WI

B.S IN COMPUTER SCIENCE AND DATA SCIENCE

Sep. 2020 - Dec. 2022

• GPA: 3.9/4.0

Publication

CONFERENCES

- C1 S. Park, **H. Choi**, and U Kang. "Knowledge-preserving Pruning for Pre-trained Language Models without Retraining," The International Conference on Learning Representations (**ICLR**) 2024 Submission, May 2023.
- C2 S. Lee, **H. Choi**, J Choi, J Lee, S Oh, S Ko, and I Shin. "Explore, Select, Derive, and Recall: Augmenting LLM with Human-like Memory for Mobile Task Automation," The International Conference on Mobile Systems, Applications, and Services (**MobiSys**) 2024 Submission, Dec 2023.

Honors and Awards

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| 2022 | Top 10% in Predicting Autonomous Sensor Antenna Performance, LG Research AI Hackathon | South Korea |
| 2022 | Nominated for Developing User-friendly Online History Search Chrome Extension, Hatathon | Madison, WI |
| 2022 | Dean's List for All Semesters Attended in Recognition of Exceptional Academic Excellence | Madison, WI |
| 2017 | Dean's List for All Semesters Attended in Recognition of Exceptional Academic Excellence | Albany, NY |

Professional Experience

FLUIZ

Seoul, South Korea

AI Intern Researcher, Advisor: Prof. Insik Shin

Sep. 2023 - Jan. 2024

- Collected data for UI Captioning and encoded visual contextual information among UI elements based on the mobile app page hierarchy structure.
- Implemented and integrated LLM technology in multi-device applications on Android Studio and web domains.
- Research Assistant in KT AI Convergence Education Program at KAIST.
 - Assisted in developing a network for leveraging Vector DBMS and LangChain-powered applications.
 - Assisted in building an architecture for an image-resizing application based on LLM and Diffusion Model.

Seoul National University

Seoul, South Korea

AI Researcher, Advisor: Prof. U Kang

Jan. 2023 - July. 2023

- Specialized in AI model compression and reinforcement learning through quantization research.
- Contributed to a survey paper on lightweight Transformer models using diverse quantization techniques.
- Co-authored a paper on model pruning for ICLR2024 Submission by evaluating comparable models and aiding with English translations.

University of Wisconsin-Madison

Madison, WI

Undergraduate AI Research Intern, Advisor: Prof. Ran

Sep. 2022 - Dec. 2022

- Simulated CADS operational life cycle and tested new models in a custom CARLA environment.
- Validated collaborative automated driving algorithms with DETR.

University of Wisconsin-Madison

Madison, WI

Academic Mentor, Employer: Maisee Her

Sep. 2021 - Dec. 2022

- Actively engaged in serving the UW community and dedicated to developing intercultural leadership and communication skills.
- Diligently mentored my mentees through academic counseling, resource sharing, and a sincere dedication to their success.
- Enhanced proficiency in crucial AI domains including Linear Algebra, Artificial Intelligence, Human-Computer Interaction, and C Programming.

Projects

Object Detection for Autonomous Driving using DETection TRansformer

Madison, WI

Implemented end-to-end detection techniques for large objects in the CARLA environment.

Sep. 2022 - Dec. 2022

CARLA Research Team Project

Madison, WI

Developed a comprehensive workflow for the Sensing-Perception Group CADS System using the CARLA simulator.

Sep. 2022 - Dec. 2022

Database Development

Madison, WI

Understood core techniques of DBMS and constructed a database structure for real-world problems using MySQL.

Sep. 2022 - Dec. 2022

Visitory

Madison, WI

Developed a user-friendly interactive internet history search Chrome extension.

Jan. 2022 - May. 2022

Operating Systems

Madison, WI

Explored MapReduce, memory encryption, file systems, lottery scheduler, shell, and xv6 kernel threads.

Jan. 2022 - May. 2022

Data Modeling with Python & R

Madison, WI

Explored data visualization, version control, A/B testing, classification, clustering, optimization, simulation techniques, and more.

Jan. 2022 - May. 2022

Human-Computer Interaction Report Papers

Madison, WI

Explored IT support interactions at LTG helpdesk, Memorial Library. Various methods used. Details in processbook.

Sep. 2021 - Dec. 2021

Cardiovascular Disease Risk Factor Analysis

Madison, WI

Examined causal relationships among variables using statistical models and visualized results through graphs in R.

Sep. 2021 - Dec. 2021

COVID-19 Self-Checker

Madison, WI

Developed a simple self-diagnostic analysis CPP software for COVID-19 symptoms.

Jan. 2021 - May. 2021

A Free Website for Short-Term Memory Testing

Madison, WI

Implemented a multi-threaded timer in the back end and enabled parsed data transfer among pages through RestAPI.

Sep. 2020 - Dec. 2022

Time Clock System

South Korea

Designed C# Windows software for employee attendance tracking, utilizing a MYSQL-based database with SQL.

Jan. 2019 - May. 2019

Unity Games Development

South Korea

Created game architectures and optimized graphics performance by batching game objects within the hierarchy.

May. 2018 - Aug. 2018

Automation System Development

South Korea

Analyzed data assignment patterns by component in the company's platform and developed software for multilingual tasks.

Feb. 2018 - May. 2018

Teaching

RESEARCH ASSISTANT, HYBRID, SEPTEMBER 2023 – DECEMBER 2023

Fall 2023

KT-AI Convergence Education Program, Research Assistant

PRIVATE TUTOR, REMOTE, OCTOBER 2022 – PRESENT

Fall 2023

English Speaking Tutoring, Advanced-level

Fall 2023

Mathematical Statistics with Applications, graduate-level

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|-------------|---|
| Fall 2023 | Linear Algebra, undergraduate-level |
| Summer 2023 | Mathematical Statistics with Applications, graduate-level |
| Spring 2023 | Mathematical Statistics with Applications, graduate-level |
| Spring 2023 | English Speaking Tutoring, Intermediate-level |
| Fall 2022 | Linear Algebra, undergraduate-level |

ACADEMIC MENTOR, UW-MADISON, MADISON, WI, SEPTEMBER 2021 – DECEMBER 2022

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| Fall 2022 | Introduction to Human Computer Interactions (CS570), undergraduate-level |
| Fall 2022 | Introduction to Artificial Intelligence (CS540), undergraduate-level |
| Spring 2022 | Elementary Matrix and Linear Algebra (CS340), undergraduate-level |
| Spring 2022 | Introduction to Computer Systems (CS354), undergraduate-level |
| Spring 2022 | Programming III (CS400), undergraduate-level |
| Fall 2021 | Elementary Matrix and Linear Algebra (CS340), undergraduate-level |
| Fall 2021 | Introduction to Computer Engineering (CS252), undergraduate-level |

Professional Activities

COMMUNITY SERVICE

English Translation, NAVER Knowledge iN

Online Freelance English Translation Expert

Remote

May. 2022 - Present

CERTIFICATIONS

NLP Development Program, Seoul ICT Innovation Square

Trainee

Remote

July. 2022 - Sep. 2022

Machine Learning A-Z: Hands-on Python And R, Udemy

Trainee

Remote

Aug. 2022 - Aug. 2022

Machine Learning Practical Development: 8 Practical Projects, Udemy

Trainee

Remote

Aug. 2022 - Aug. 2022

LG Aimers, LG AI Research

Trainee

Remote

July. 2022 - Aug. 2022

AI Engineering Program, Seongnam Industry

Trainee

Remote

July. 2022 - Aug. 2022

Intensive English Language Program (IELP), University at Albany-SUNY

Trainee

Albany, NY

ORGANIZATIONS

CAVH Graduate Student Research Group, University of Wisconsin-Madison

Member

Madison, WI

Computer Science Undergraduate Research Group, University of Wisconsin-Madison

Member

Madison, WI

Student Software Development Club, University of Wisconsin-Madison

Member

Madison, WI

References

References are provided upon request.