# Hojun (Eric) Choi

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## RESEARCH INTERESTS

Computer Vision • Multimodal Learning • Hyper-scale AI • Software Development

## SKILLS

**PROGRAMMING LANGUAGES**
- Python, C, C++, SQL, R

**FRAMEWORKS**
- PyTorch, TensorFlow

## EDUCATION

**University of Wisconsin, Madison**

B.S. in Computer Science and Data Science | Dec 2022
Advisor | Dr. Michael Radloff and Dr. Sara Rodock

## HONORS AND AWARDS

**2022 LG Research Hackathon** | 2022
Ranked top 10% on hackathon with the topic of predicting the antenna performance of autonomous sensors

**2022 Hatathon Nomination, Undergraduate Research Lab (UPL)** | 2022
Built a human-friendly interactable internet history search chrome extension

**Dean's List, All semesters in attendance** | 2017-2022
The highest level of academic achievement

## PUBLICATIONS

**Conference Papers**

2023

[P1] Seungcheol Park, Hojun Choi, U Kang, "Knowledge-preserving Pruning for Pre-trained Language Models without Retraining", NeurIPS 2023 Conference Submission, May 2023.

## PROFESSIONAL EXPERIENCE

**SEOUL NATIONAL UNIVERSITY** | AI RESEARCHER
2023 | SEOUL, SOUTH KOREA
MENTOR: Prof. U. Kang

- Specialized in quantization research for AI model compression and contributed to a survey paper on lightweighting Transformer models using various quantization techniques.
- Co-authored a paper on model pruning for NeurIPS, assessed competing models, and assisted with English translations.

**UNIVERSITY OF WISCONSIN – MADISON** | UNDERGRAD. AI RESEARCHER
2022-Currnet | MADISON, WISCONSIN

MENTOR: Prof. Ran

- Simulated the operational life cycle of the CADS in the CARLA environment.
- Validated the developed algorithms of collaborative automated driving.
- Developed and test new models in the customized environment and the CARLA environment.

**UNIVERSITY OF WISCONSIN – MADISON** | ACADEMIC MENTOR
2021-Current | MADISON, WISCONSIN
EMPLOYER: Masiee Her

- Assisted my mentee by giving academic advice, sharing resources, and caring about my students' success.
- Horned my skills in major domain areas of AI; Linear Algebra, AI, HCI, C Programming, etc.

**MAPAL HITECO, INC.** | PRODUCTION TEAM & SW DEVELOPER INTERN
2018-2020 | SIHEUNG-SI, SOUTH KOERA

- Designed and implemented automated data mapping tools for ERP platform with multi-language contents.
- Provided maintenance services on the company's website and ERP platform.
- Developed time clock systems to check employees' attendance.

## PROJECTS

**Object Detection for Autonomous Driving using DEtection TRansformer** | 2022
Implemented end-to-end detection techniques for large objects in the CARLA environment.

**Database Development** | 2022
Undertanding of core techniques of DBMS & Building a databse structure on real-world problems using MySQL.

**CARLA Research Team Project** | 2022
Built a complete workflow of Sensing·Perception Group CADS System using CARLA simulator.

**AI Software and Applications** | 2022
A full list of my AI projects (may need to be updated).

**Visitory – Hatathon** | 2022
Built a human-friendly interactable internet history search chrome extension.

**Introduction to Operating Systems** | 2022
MapReduce, memory encryption, file system, lottery scheduler, shell, and xv6 kernel threads.

**Data Modelings with Python & R** | 2022
Data visualization, version control, A/B testing, classification, clustering, optimization, simulation techniques, etc.

**Human-Computer Interaction Report Papers** | 2021
Investigated the problem domain of three different settings.

**Cardiovascular Disease Risk Factor Analysis** | 2021
Analyzed causal relationships among actors using statistical models & visualized the results through graphs in R.

**COVID-19 Self-Checker** | 2021
A simple self-diagnostic analysis software for COVID-19 symptoms.

**A Free Website for Short-Term Memory Testing** | 2020
Implemented multi-threaded timer in back-end and parsed data transfer among pages through RestAPI.

**Time Clock System** | 2019
A window software for employee' attendance tracker.

**Unity Games Developments** | 2018
Designed game architectures and optimized graphics performance by batching game objects with hierarchy.

**Automation System Development** | 2018
Analyzed patterns of data assignment by component in the company's platform and developed software for multilingual tasks.

## TEACHING EXPERIENCE

- **Private Tutoring**

  Course | Linear Algebra
  Instructor | Hojun (Eric) Choi
  Location | Remote (Kimstudy)
  Period | 2022-current

  **Academic Mentor**

  Course | Introduction to Human Computer Interactions (CS 570)
  Instructor | Prof. Jacob Thebault-Spieker
  Location | University of Wisconsin, Madison
  Semester | Fall 2022

- **Academic Mentor**

  Course | Introduction to Artificial Intelligence (CS 540)
  Instructor | Prof. Jerry Zhu
  Location | University of Wisconsin, Madison
  Semester | Fall 2022

- **Academic Mentor**

  Course | Elementary Matrix and Linear Algebra (MATH 340)
  Instructor | Prof. Alexander Hanhart
  Location | University of Wisconsin, Madison
  Semester | Fall 2021, Spring 2022

- **Academic Mentor**

  Course | Introduction to Computer Systems (CS 354)
  Instructor | Prof. Michael Doescher
  Location | University of Wisconsin, Madison
  Semester | Spring 2022

- **Academic Mentor**

  Course | Programming III (CS 400)
  Instructor | Prof. Gary Dahl
  Location | University of Wisconsin, Madison
  Semester | Spring 2022

- **Academic Mentor**

  Course | Introduction to Computer Engineering (CS 252)
  Instructor | Prof. James Skrentny
  Location | University of Wisconsin, Madison
  Semester | Fall 2021

## MENTORED STUDENTS

- Sharmin Akter Chowdhury | 2021-2022
  Institution | University of Wisconsin, Madison
  Degree Level | Undergraduate
  Major | Computer Science
- Jeremiah Dominick Lipscomb | 2022
  Institution | University of Wisconsin, Madison
  Degree Level | Undergraduate
  Major | Computer Science
- Isaac Odeoyin | 2021
  Institution | University of Wisconsin, Madison
  Degree Level | Undergraduate
  Major | Computer Science

## PROFESSIONAL ACTIVITIES

**CONFERENCE REVIEWS**
ICLR, NeurIPS, CVPR, arXiv, ICPR, AAAI, etc. | 2021-current

**ONLINE FREELANCE ENGLISH TRANSLATION EXPERT, NAVER KNOWLEDGE IN**
- Equipped with professional Korean-to-English translation expertise | 2016-current

**LG TECHNICAL CERTIFICATE PROGRAM IN MACHINE LEARNING, LG RESEARCH**
- Absorbed the state-of-the-art AI technology of autonomous driving and radar sensors | 2022

**NLP CERTIFICATION PROGRAM, SEOUL ICT INNOVATION SQUARE**
- Equipped with core knowledge and expertise in the in-demand field of NLP | 2022

**AI ENGINEERING PROFESSIONAL CERTIFICATE, ABLEARN AND SEONGNAM INDUSTRY**
- Online Certified AI ENGINEERING Certification Training | 2022

**CERTIFICATE OF COMPLETION: MACHINE LEARNING A-Z: HANDS-ON PYTHON AND R**
- Learned to create ML algorithms in Python and R from two Data Science experts | 2022

**CERTIFICATE OF COMPLETION: INTENSIVE ENGLISH LANGUAGE PROGRAM**
- Completed the IELP with the highest level at the University at Albany - SUNY | 2016

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## ORGANIZATION

**CAVH GROUP, UW-MADISON**
- Graduate Student Research Group in the Depart. of Civil and Environmental Engineering | 2022

**ARTIFICIAL INTELLIGENCE CLUB, UW-MADISON**
- A project-based organization committed to bringing together students with an interest in AI | 2022

**UNIVERSITY WISCONSIN UNDERGRADUATE PROJECT LAB**
- UW Madison Computer Science Undergraduate Research Membership | 2022

**STUDENT SOFTWARE DEVELOPMENT CLUB**
- UW Madison Student Software Development Membership | 2021