

Matthew DongKyu Cho

GRADUATE RESEARCHER @ SEOUL NATIONAL UNIVERSITY · RESEARCH SCIENTIST INTERN @ LG AI RESEARCH

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Personal Profile

A Research Scientist Intern at LG AI Research, Data Intelligence Lab. A recent master's graduate from the Graduate School of Data Science, Seoul National University, advised by Professor Sanghack Lee. My research interests include Causal Representation Learning and Domain Generalization.

Education

Seoul National University

Seoul, South Korea

Master of Science in Data Science

March 2021 - August 2023

- Advised by Professor Sanghack Lee
- **Courses:** Machine Learning and Deep Learning for Data Science, Big Data and Knowledge Management Systems, Software Platforms for Data Science, Machine Learning for Visual Understanding, Text Analytics and Big Data, Causal Inference for Data Science, Special Topics in Data Science: Meta Learning, Data Science Capstone Project, Dissertation Research, Special Lecture on Data Science

Seoul National University

Seoul, South Korea

Bachelor of Arts in Information Science and Culture / Western History (Double Major)

March 2014 - February 2019

- Graduated with Distinction (Cum Laude)

Work Experience

LG AI Research

Seoul, South Korea

Research Scientist Intern

July 2023 - Present

- Time-Series Foundation Models, Out-of-distribution generalization
- Causality-Driven Prediction & Optimization for Decision-Making

Causality Lab, Seoul National University

Seoul, South Korea

Graduate Research Assistant

July 2021 - Present

- Causal Invariance for Out-of-distribution Robustness
- Collaborative Research Projects with corporate partners (NH Investments & LG AI Research)

VAIV Company (Former DaumSoft)

Seoul, South Korea

Analyst Intern

Jan 2019 - Feb 2019

- Data-Driven Market Analysis for corporate clients.

Republic of Korea Armed Forces

Icheon, South Korea

Military Interpreter

March 2016 - December 2017

- Military Interpreter for the Republic of Korea Armed Forces.
- **Technical Skills:** Korean-English Interpretation

Research

Distillation-based Single Source Domain Generalization via Mutual Information Regularization

Seoul, South Korea

Seoul National University Causality Lab

Working Paper (Under Review)

- Keywords: Causal Representation Learning, Domain Generalization

(Working Title) Surgical Weight Averaging for Out-of-domain Generalization

Seoul, South Korea

LG AI Research

Working Paper

- Keywords: Ensemble Learning, Domain Generalization

DELPHI: Leveraging Self Knowledge as Teachers for Out-of-domain Robustness

Seoul National University Causality Lab

- Keywords: Causal Representation Learning, Domain Generalization, Continual Learning

Seoul, South Korea

Working Paper

Projects

Stock Interrelation Research using Keyword and Supply Chain data

Seoul National University and NH Investment & Securities

- A collaborative research with NH Investment & Securities.
- A learning pipeline for a Financial Language Model
- Interactive Graph Database using the Bloomberg Supply Chain Data.
- Technical Skills:** Financial-Domain specific Language Models, Financial Data, Graph Database.

Seoul, South Korea

July 2021 - August 2022

Towards Language Models Capable of Causal Reasoning

Seoul National University and LG AI Research

- Collaborative research with LG AI Research & UNIST
- A Causal NLP Project Under Progress
- Technical Skills:** Causal Inference, Large-scale Language Models.

Seoul, South Korea

August 2022 - Present

Class Projects

Seoul National University

- Class Project for *Special Topics in Data Science- Meta Learning*: "Semi-Supervised Federated Learning with Representations"
- Class Project for *Machine Learning for Visual Understanding*: "A combination approach for wikipedia Image/Caption Matching Competition"

Seoul, South Korea

March 2021 - July 2023

Skills

Programming Python, R, SQL.

Miscellaneous Linux, Docker, Neo4j, \LaTeX (Overleaf/R Markdown), Tableau, Git.

Soft Skills French, Korean, English-Korean Interpretation

Languages

English Professional proficiency/ TOEFL 118 (2020.08), 116 (2022.08)

Korean Native proficiency

French Intermediate proficiency/ DELF B1