

Yejin Cho (Zoe)

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RESEARCH INTERESTS

My research focuses on developing scalable, resilient, and efficient solutions for next-generation network systems. Motivated by the challenges of achieving scalability and adaptability in large-scale networks, I aim to improve performance and robustness by addressing the limitations of current systems. Ultimately, I strive to contribute to a more inclusive and reliable Internet infrastructure.

EDUCATION

University of Southern California, Viterbi School of Engineering

Master in Computer Science (Computer Networks Track)

Jan 2024 - Aug 2025 (Expected)

Chung-Ang University, School of Computer Science and Engineering

Bachelor of Engineering ; GPA: 4.09/4.5 (Major GPA : 4.2/4.5); 148 Credit

Magna Cum Laude

Mar 2018 - Aug 2023

CERTIFICATES

Cisco Certified Network Associate (CCNA)

Cisco, Nov 2023

- Configured and optimized OSPF routing, implemented VLANs and inter-VLAN routing, set up and managed ACLs, NAT, and DHCP, and practiced troubleshooting network issues using Cisco Packet Tracer.

HONORS AND AWARDS

Graph Neural Networking Challenge 2023 (5th Place)

ITU, Barcelona Neural Networking Center

Nov 2023

- Developed a packet delay prediction model using Graph Neural Networks (GNN) with 500GB of PCAP files.

Excellence in Undergraduate Research Program (3rd Place)

Chung-Ang University

Oct 2022

Scholarship for Practical Education (Research Program)

Chung-Ang University

Feb 2021

Davinci Software Camp (Top Prize)

Chung-Ang University

Mar 2019

Merit-based Scholarship for Academic Excellence

Chung-Ang University

Aug 2018

- Granted for fall semester (top 10% GPA in department)

PUBLICATIONS

Broadcasting in Vehicular Ad-hoc Network: Survey on Recent Advances

13th International Conference on ICT Convergence (ICTC)

2022

- Y. Cho**, **M. Park**, and **J. Paek**.
- Conducted an in-depth survey of broadcasting techniques in Vehicular Ad-hoc Networks (VANET).

UNDER REVIEW

KRongBERT: Enhanced Factorization-based Morphological Approach for Korean Language Model

Information Processing and Management (Under Major Revision)

2024

- H. Yu**, **Y. Cho**, and **M. Kim**.
- Developed KRongBERT, a Korean-specific pretrained model optimized for morphological segmentation and domain-specific tasks.

PRE-PRINTS

Nonogram-Solver GNN: Grid-Puzzle Solving GNN

arXiv Preprint

2024

- Y. Cho**.
- Proposed a Graph Neural Network (GNN)-based approach to efficiently solve combinatorial Nonogram puzzles. Implemented the model using *PyTorch Geometric*. Shows that GNNs are better at scaled problems compared to other models.

RESEARCH EXPERIENCES

Research Guidance - Network Systems Lab (NSL)

Undergraduate Researcher (Prof. Jeongyeup Paek)

- Research Areas: Packet Delay Prediction, VANET (Vehicular Ad-hoc Network)

Chung-Ang University

Aug 2023 - Dec 2023

Research Project (NSF Funded) - Data Intelligence Lab

Undergraduate Researcher (Principal Investigator : Prof. Mucheol Kim)

- Project title: Research and Development of AI-based Real-time Optimal Disaster Evacuation Route Detection
- Contribution: Developed core logic of Graph Neural Network and Recommendation System based algorithm design and implementation in Python

Chung-Ang University

Sep 2022 - Aug 2023

Undergraduate Research Program - Data Intelligence Lab

Undergraduate Researcher (Advisor : Prof. Mucheol Kim)

- Topic: Adversarial Attack and Robustness
- Activity: Improve the performance of YourBench; Updated to reflect recent researches (Research Report)

Chung-Ang University

Dec 2021 - Jun 2023

Undergraduate Research Program - Computer Vision Machine Learning Lab

Undergraduate Researcher (Advisor : Prof. Junseok Kwon)

- Participated in Summer Lab Paper Seminar; Reviewed Paper List

Chung-Ang University

Jun 2018 - Aug 2018

WORK EXPERIENCES

Huple

Lead iOS developer

- Launched an application for traveling Jeju Island - Jeju2ri.
- **Technical Challenges & Solutions:**

- * **SwiftUI NavigationStack Bug:** Encountered an issue where `NavigationLink` failed to maintain the correct state in nested views during Beta builds, causing crashes and navigation inconsistencies. Developed a reproducible minimal project and submitted a detailed bug report, including diagnostics, stack traces, and logs to Apple Feedback Assistant, which led to Apple incorporating a fix in the following release.
- * **Asynchronous UI Updates:** Faced unexpected `View` rendering delays when using `@Published` with Combine pipelines for real-time travel updates. Designed a custom scheduler to throttle and debounce data updates, reducing unnecessary re-rendering and ensuring optimal performance with smooth UI transitions.

Remote

Dec 2020 - Jul 2021

MinTech

iOS developer

- Role: Intern (Aug 2019 – Oct 2019), Full-time developer (Nov 2019 – Jun 2020)
- **Projects**

- * Independently Designed and Implemented Application 'Jsceno - Live Trail Running Platform' with zero operational cost (Government Funded Project).
Front-end: iOS Application, Back-end: Firestore trigger functions, Database: Google Spreadsheet
- * Developed `AIing`, a Platform for Power Bank Rental Service
- * Maintained `SSingSSing`, a Platform for Shared Scooter, DAU=10K/day

Seoul, Republic of Korea

Aug 2019 - Jun 2020

SELECTED PROJECTS

Evaluating the Robustness of Traffic Engineering Algorithms

CSCI 656 Research Project

Jan 2024 – May 2024

- Designed and implemented a framework to evaluate the robustness of ML-based traffic engineering algorithms under dynamic traffic demands. Automated perturbed traffic matrix generation and LP-based optimal flow calculations for topologies like Abilene, ASN2k, and GEANT. Formulated a robustness metric integrating Maximum Concurrent Flow (MCF) and traffic matrix change. The benchmark provides reproducible datasets and tools to quantify algorithm performance in real-world, time-varying network conditions. Tested two models, DOTE and TEAL under various conditions.

Measuring the Performance of Scalable Vector Databases

CSCI 555 Research Project

Jan 2024 – May 2024

- Conducted a performance evaluation of scalable vector databases, comparing `Weaviate` and `ElasticSearch` in terms of query latency, scalability, and indexing methods. Explored horizontal scaling strategies and their impact on system performance. The research utilized `Weaviate`, `ElasticSearch`, `HNSW`, and distributed system benchmarking tools.

USC Knock Knock - Wikipedia System for Korean Students

Personal Project

Jul 2024 – Aug 2024

- Independently developed a wiki-style information platform tailored for Korean students at USC. Leveraged open-source technologies including `DocuSaurus`, `Netlify`, `Algolia`, `Disqus`, and `Dhub` to provide essential academic resources and guides, enhancing accessibility and navigation for users.

GitHub Repository Recommendation System

Naver Boostcamp AI Tech

May 2022 – Jun 2022

- Developed a Chrome extension to inject personalized repository recommendations into *github.com*. Designed models using content-based and collaborative filtering to address cold-start problems, while integrating popularity-based suggestions. Built the extension using *React* and *TypeScript*, with batch training pipelines managed via *Airflow*.

YourBench - Adversarial Robustness Evaluation Tool

Capstone Project

Sep 2021 – Feb 2022

- Developed a tool for evaluating adversarial robustness of PyTorch models. Implemented state-of-the-art attacks, including *FGSM*, *CW*, *PGD*, and *DeepFool*, to quantify model vulnerabilities. Automated the generation of comprehensive PDF reports to visualize attack performances.

EXTRACURRICULAR ACTIVITIES

Boostcamp AI Tech Recommendation System Track

Naver Connect Foundation, Remote

Student

Jan 2022 – Jun 2022 (Full-time)

- Completed a comprehensive program on deep learning and recommendation systems. Applied theoretical concepts to team projects, including image classification, MovieLens recommendation, and Deep Knowledge Tracing.

Apple Certified iOS App Design to Develop Course

CodersHigh

iOS Developer

Dec 2018 – Feb 2019 (Full-time)

- Designed and developed iOS applications from wireframing to prototyping. Explored frameworks such as *UIKit*, *ARKit*, *CoreML*, and *CoreData*. Final project: *Bubble Memo*.

Leader of ZeroPage: CAU Computer Science Academic Club

Chung-Ang University

Member, Vice-President, President

Mar 2018 – Jun 2019

- Progressed from member to president, leading multiple club initiatives. Hosted a 4-day stay-up-all-night Computer Science Conference and collaborated with Baekjoon Online Judge to organize a coding competition. [[Conference Link](#)].

Tech Mentor at CIEN (Game Developer Club)

Chung-Ang University

Member, Tech Mentor

Mar 2018 – Dec 2023

- Mentored developers during Nexon GameJam and contributed to game projects. Developed and published *AKLG*, a rogue-like card game built with Unity and C#. Created original background music for games, released on SoundCloud. Published game: *AKLG on App Store*.

ATTENDED CONFERENCE AND WORKSHOP

- 2023 International Conference on Platform Technology and Service (16th-18th August 2023, Busan)
- 2022 ICTC : online participation due to COVID-19