

Kyung Min (Brian) Ko

[U.S. Permanent Resident]

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EDUCATION

Purdue University, West Lafayette

Aug 2019 - May 2024

*Bachelor of Science in Electrical Engineering, graduated **with distinction***

GPA: **3.94/4.00**

- TA: ECE 570 Artificial Intelligence (**graduate**), ECE 20875 Python for Data Science
- Coursework: Artificial Intelligence (**graduate**), Statistical Machine Learning (**graduate**), Natural Language Processing (**graduate**)

PUBLICATION

Benchmark Algorithms for Distribution Matching

Under Work, 2024

Kyung Min Ko, Jim Lim, Ziyu Gong, David Inouye. [Paper]

Backward Curriculum Reinforcement Learning

IEEE RO-MAN (Oral), 2023

Kyung Min Ko. [Paper] [Code]

V-advCSE: Virtual Adversarial Contrastive Learning for Sentence Embeddings

Pre-print, 2023

Kyung Min Ko. [Paper] [Code]

Exploiting Code Language Models and Contrastive Learning in Binary Code Authorship

Pre-print, 2023

Kyung Min Ko, Nan Jiang, Lin Tan. [Paper] [Code]

EXPERIENCE

Research Assistant

May 2024 - Present

Purdue University, West Lafayette, IN. Advised by Prof. David I. Inouye

- Conducting research on building a benchmark paper for distribution matching, focusing on critical aspects such as calibration, domain adaptation, and fairness.
- Compiling and analyzing various methods of post hoc calibration and regularization, applying these techniques to both regression and classification models to enhance model reliability and accuracy.
- Developing and implementing robust evaluation frameworks for model calibration, assessing the effectiveness of different approaches in ensuring trustworthy machine learning systems.

NSF Summer Undergraduate Research Intern [Paper & Code]

May 2023 - Present

Purdue University, West Lafayette, IN. Advised by Prof. Lin Tan

- Discovered the application of code language models for malware author classification
- Engineered a novel approach for function-level learning, transitioning from traditional file-level input
- Incorporated contrastive learning methodologies to address code authorship tasks, eliminating the need for labels

Human Resource Manager

Nov 2021 - May 2023

Republic of Korea Army, South Korea

- Optimized the boundary protection schedule system by automating processes with programming
- Facilitated proper troop assignments by documenting the transferring process, considering current unit status
- Recognized for developing an AI object tracking system used in the guardroom, awarded by the chief of the general staff of the army

NSF Summer Undergraduate Research Intern [Code]

Jun 2021 - Aug 2021

Georgia Tech, Georgia, Atlanta. Advised by Prof. Siva Theja Maguluri

- Implemented REINFORCE, A2C, and REINFORCE with baseline algorithms applicable to both continuous and discontinuous action spaces
- Validated algorithms across diverse environments from Open AI gym, addressing real-world challenges
- Authored a paper on IEEE RO-MAN, introducing novel backward curriculum learning, enhancing sample efficiency via reverse order training

PROJECTS

Guardroom Object Tracking System [Code]

Jun 2022

Awarded commandment by the chief of the general staff of the army

- Developed a multi-object tracking system using Yolo-v4 and Deep Sort for automated CCTV surveillance in guardrooms
- Enhanced unit security by tracking objects entering selected regions and calculating real-time moving average distances to display object trajectories