Tae hee **Kim**

KeyWord : Tabular Data Analysis, LLM, Knowledge Graph

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Education

Computer Engineering *Busan, S.Korea*

Dong-A University (DAU) *2019. 03. - 2025. 02.*

- Received competitive scholarships, Busan area talent scholarships, and Cheongchon Scholarship Foundation several times.

Skills

Programming Language
Python Developed data analysis scripts and web applications. Used for many projects below.
C/C++ Implemented high-performance algorithms. used Professional Training.
Java Developed robust backend systems.

SW Dev
Docker Deployed microservices architecture.

Data Analysis Skill
MongoDB Handled large-scale NoSQL databases.
PostgreSQL Handled large-scale relational databases with advanced querying.
PyTorch/Tensorflow Developed machine learning models.

Platforms
Git Version control for collaborative projects.

Research Experience

DAU Data Science Labs – Undergraduate Research Intern *Busan, S.Korea*

Conducting and assisting research with Prof. Jungkyu Han and Prof. Sejin Chun *Nov 2022 - PRESENT*

- Proposed and developed a novel methodology for job matching algorithms, which significantly improved accuracy.
- Played a key role in the development and implementation of the algorithm, using Python and machine learning frameworks.
- Collaborated with team members to conduct experiments and analyze data, contributing to the research findings.
- Presented research findings at academic conferences, gaining valuable feedback and enhancing presentation skills.

Professional Training

Fundamentals of Accelerated Computing with CUDA C/C++ *Busan, S.Korea*

CONTENTS *25 May 2022*

- Learned the fundamentals of accelerating applications using CUDA C/C++ through a structured curriculum.
- Gained hands-on experience in managing accelerated application memory with CUDA Unified Memory and profiling applications using nvprof.
- Developed skills in asynchronous streaming and visual profiling for optimizing accelerated applications with CUDA C/C++.
- Successfully completed practical exercises to reinforce theoretical knowledge, leading to a thorough understanding of CUDA concepts.
- Applied the learned techniques to improve performance in machine learning and deep learning projects using Python, leveraging CUDA for efficient computation.

Project Experience

Robust Knowledge Tracing with XGBoost on Multi-dimensional Features *Busan, S.Korea*

DETAIL *Mar. 2023 – Oct. 2023*

- Proposed a knowledge tracing approach using XGBoost to address limitations of RNN-based models in handling multi-dimensional educational data.
- Processed and normalized features such as problem metadata, user interaction patterns, and time-based variables for effective model training.
- Conducted comparative experiments with baseline models (e.g., LSTM-based DKT) and evaluated performance using AUC as the primary metric.
- Analyzed dataset characteristics to extract meaningful insights that contributed to improved prediction accuracy.
- Performed hyperparameter tuning on multiple models to ensure fair comparison and optimized performance across methods.

Personalized POI (Point-Of-Interest) Recommendation System using Content and Geographic Information *Busan, S.Korea*

DETAIL *Mar. 2024 – Dec. 2024*

- Developed a personalized POI recommendation system leveraging user reviews and geographic information.
- Applied BERT to extract semantic features from user reviews and vectorized POI content for model training.
- Implemented and optimized Distance BPR (Bayesian Personalized Ranking) to incorporate user preferences and spatial characteristics.
- Improved performance of LightGCN by integrating geographic-aware loss functions.
- Processed and utilized Yelp dataset, including review text and location metadata, for training and evaluation.
- Achieved higher recommendation accuracy compared to baseline CF models.
- Awarded the **Excellence Award** at the 2024 FairDay Graduation Project Exhibition.

Honors & Awards

Domestic

2024 **Excellence Award,** FairDay Graduation Project Exhibition for Creative Convergence Software *Busan, S.Korea*

Presentation

Study on XGBoost-based Knowledge Tracing Robust to Multidimensional Features *Busan, S.Korea*

Hyun-Jin Cho, Dong-Uk Park, Tae-Hee Kim, Jungkyu Han, Hyunseok Kim *Oct. 2023*

- 2023 Journal of Digital Contents Society (KCI), Vol. 24, No. 10

References

Prof. Jungkyu Han

Introduction

- Professor at DAU, Dept. of Computer Science and Artificial Intelligence, Email: jkhan@dau.ac.kr

Prof. Sejin Chun

Introduction

- Professor at DAU, Dept. of Computer Science and Artificial Intelligence, Email: sjchun@dau.ac.kr