Sungwon Kim

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EDUCATION

Johns Hopkins University   *Baltimore, MD*
Masters in Computer Science   *Expected: December 2024*
- Enrolled in the Combined Computer Science Masters Program at the Johns Hopkins University

Johns Hopkins University   *Baltimore, MD*
BS Computer Science, Applied Mathematics & Statistics   *Graduated: June 2024*
- GPA: 3.9/4.0 (4.0 in all 400+ level courses)
- Course Assistant for NLP: Self-supervised Models, Natural Language Processing, Introduction to Algorithms, Discrete Mathematics, Automata and Computation Theory

Work Experience

Center for Language and Speech Processing   *Baltimore, MD*
Research Assistant   *May 2023 – Current*
- Created chatbots which refers to a database for responses.
- Used Combination of Dense / Sparse, and traditional retrievals for best results.
- Obtained metrics for different RAG approaches

Johns Hopkins University   *Baltimore, MD*
Research Assistant   *May 2023 – September 2023*
- Created neural network-derived brain perfusion map processing pipeline for model-free CTP images.
- Achieved better loss metrics compared to a recent paper on the same dataset.

Republic of Korea Army   *Yanggu, Korea*
Information Systems Maintenance/Operator, Squad Leader   *September 2020 – March 2022*
- In charge of receiving and sending sensitive information
- Squad Leader from June of 2021

Nexon Korea   *Pangyo, Korea*
Platform Analyst   *June 2020 – August 2020*
- Analyzed game data logs using SQL, Hadoop, and Python
- Distinguished experienced players from the player base using machine learning techniques including various clustering methods, random forest, LSTMs, and CNN

PROJECTS

arXiv Reference finder (Hophacks)   *September 2023*
- Given a research paper, find relevant parts from the referenced papers, if the paper is in arXiv.
- Used BM25, crossencoders for similarity search. Used arXiv API calls to download reference data, and regular expression to chunk pdf.
- Awarded second overall price for HopHacks 2023

Custom Transformers   *May 2023 – June 2023*
- Created customized transformer layers with non-standard implementations.
- Achieved better loss compared to Huggingface implementation of BERT.

Misc Game Tools(Toys)   *June 2020 – Current*
- Created an Excel sheet for calculating the expected cost for equipment upgrades in computer games using Markov chain
- Created a small planner that tracks every Johns Hopkins University course information locally.
- Coded Pokemon battle damage calculator & Derived method for type ranking calculation
- Coded Enigma machine and an encryption decoder using Index of Coincidence.

Othello Game   *June 2019 – November 2019*
- Developed an Othello game and UI using python and wxpython.
- Implemented AI using minimax with alpha-beta pruning.

SKILLS

Software/Skill set: LaTeX, SQL, Microsoft Office (Excel, PowerPoint, Word, Outlook)
Programming: Python, Pytorch, Huggingface, Java, JavaScript, C, C++
Language: English (fluent), Korean (native)