

# TAEYOON (CONNOR) KWON

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## RESEARCH INTEREST

### Natural Language Processing, Machine Learning

Question Answering, Alignment, Knowledge & Reasoning + LLMs, Conversational Agents, Code LLMs

## EDUCATION

**Yonsei University** | Advisor: Jinyoung Yeo

Sep. 2023 - Present

*M.S. in Artificial Intelligence*

**Hanyang University (ERICA)**

Mar. 2017 - Feb. 2023

*B.S. in Computer Science*

*GPA: 3.75/4.0*

**Republic of Korea Army**

Jan. 2018 - Sep. 2019

*Seargent*

## PUBLICATIONS & PREPRINTS

(\* Equal contribution)

### PREPRINT

**[P5] Large Language Models Are Self-Taught Reasoners: Enhancing LLM Applications via Tailored Problem-Solving Demonstrations [paper]**

Kai Tzu-iunn Ong\*, Taeyoon Kwon, Jinyoung Yeo

Arxiv preprint

**[P4] COFFEE-GYM: An Environment for Evaluating and Improving Natural Language Feedback on Erroneous Code [demo]**

Hyunjoo Chae\*, Taeyoon Kwon\*, Seungjun Moon\*, Yongho Song, Dongjin Kang, Kai Tzu-iunn Ong, Beong-woo Kwak, Seonghyeon Bae, Seung-won Hwang, Jinyoung Yeo

Under Review

**[P3] THEANINE: Revisiting Memory Management in Long-term Conversations with Timeline-augmented Response Generation [paper]**

Seo Hyun Kim\*, Kai Tzu-iunn Ong\*, Taeyoon Kwon, Namyoun Kim, Keummin Ka, SeongHyeon Bae, Yohan Jo, Seung-won Hwang, Dongha Lee, Jinyoung Yeo

Arxiv preprint

**[P2] Language Models as Compilers: Simulating Pseudocode Execution Improves Algorithmic Reasoning in Language Models [paper]**

Hyunjoo Chae, Yeonghyeon Kim, Seungone Kim, Kai Tzu-iunn Ong, Beong-woo Kwak, Moohyeon Kim, Seonghwan Kim, Taeyoon Kwon, Jiwan Chung, Youngjae Yu, Jinyoung Yeo

Arxiv preprint

**[P1] COFFEE: Boost Your Code LLMs by Fixing Bugs with Feedback [paper]**

Seungjun Moon\*, Yongho Song\*, Hyunjoo Chae\*, Taeyoon Kwon, Dongjin Kang, Kai Tzu-iunn Ong, Seung-won Hwang, Jinyoung Yeo

Arxiv preprint

## REFEREED CONFERENCE PAPER

**[C3] Can Large Language Models be Good Emotional Supporter? Mitigating Preference Bias on Emotional Support Conversation [paper]**

Dongjin Kang\*, Sunghwan Kim\*, Taeyoon Kwon, Seungjun Moon, Hyunsouk Cho, Youngjae Yu, Dongha Lee, Jinyoung Yeo  
ACL'24: The 62nd Annual Meeting of the Association for Computational Linguistics. 2024

**[C2] Large Language Models are Clinical Reasoners: Reasoning-Aware Diagnosis Framework with Prompt-Generated Rationales [paper]**

Taeyoon Kwon\*, Kai Tzu-iunn Ong\*, Dongjin Kang, Seungjun Moon, Jeong Ryong Lee, Dosik Hwang, Yongsik Sim, Beomseok Sohn, Dongha Lee, Jinyoung Yeo

AAAI'24: The 38th Annual AAAI Conference on Artificial Intelligence. 2024

## [C1] Dialogue Chain-of-Thought Distillation for Commonsense-aware Conversational Agents [paper]

Hyunjoo Chae\*, Yongho Song\*, Kai Tzu-iunn Ong, Taeyoon Kwon, Minjin Kim, Youngjae Yu, Dongha Lee, Dongyeop Kang, Jinyoung Yeo  
EMNLP'23: The 2023 Conference on Empirical Methods in Natural Language Processing. 2023

## REFEREED JOURNAL PAPER

### [J1] Multi-task Deep Learning for Joint Detection of Necrotizing Viral and Non-infectious Retinitis from Common Blood and Serology Test Data [paper]

Kai Tzu-iunn Ong\*, Taeyoon Kwon\*, Harok Jang, Min Kim, Christopher Seungkyu Lee, Suk Ho Byeon, Sung Soo Kim, Jinyoung Yeo, Eun Young Choi  
IOVS: Investigative Ophthalmology & Visual Science, 2024.

## PROJECTS

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### **YATA: Yonsei generative-AI Teaching Assistant [article]** | *Yonsei University* Mar. 2024 - Jun. 2024

- Developed a personalized teaching assistant agent based on lectures and student information
- Designed overall RAG pipeline for conversational QA system
- Gained valuable experience in designing and developing production-level software

### **LLM-driven English Lecture Module** | *Market Designers Inc.* Aug. 2023 - Jan. 2024

- Designed six core lecture scenarios driven by LLMs
- Developed and optimized the pipeline of the main lecture scenarios
- Enhanced problem-solving skills from an industry-oriented perspective

### **Continuous Integration System for Chatbot Content** | *Market Designers Inc.* Mar. 2023 - Jun. 2023

- Created effective prompt templates for role-playing and open-conversation chatbot content creation
- Contributed to the continuous integration system for diverse chatbot content updates
- Learned how to collaborate with engineers without ML/DL knowledge

### **Alzheimer's Disease Diagnosis** | *Samsung Electronics - Future Technology Incubation Program* Oct. 2022 - Aug. 2023

- Developed a novel framework for Alzheimer's disease diagnosis leveraging LLMs' reasoning capabilities
- Experienced to lead a project and research as a project leader and first author
- Successfully published work, accepted at AAAI'24 [C2]

### **Intelligent Traffic Analysis System** | *Hanyang University - Global Capstone Project* Oct. 2021 - May. 2022

- Developed a density-based vehicle count model, successfully integrating it with South Korea's real-time CCTV
- Led the team effectively, managing international communication with Georgia State University
- Presented research at a domestic conference, earning recognition with a participation prize

## RESEARCH & WORK EXPERIENCE

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### **Market Designers Inc. - Tutoring** | Seoul, South Korea Mar. 2023 - Aug. 2024

*Part-time Research Scientist and NLP Engineer*

- Lead project solving real-world scenarios by deploying LLM-driven applications
- Contribute to development of LLM-based English tutoring system
- Participate in constructing a continuous integration system for chatbot content

### **Convei Lab** | Yonsei University, Seoul, South Korea Oct. 2022 - Sep. 2023

*Undergraduate Research Intern*

- Advisor: Jinyoung Yeo
- Led project developing novel framework for diagnosis leveraging LLMs' reasoning capabilities
- Co-led project applying ML/DL techniques in medical domain, resulting in journal publication [J1]

### **Data Science Lab** | Hanyang ERICA University, Ansan, South Korea Jun. 2022 - Nov. 2022

*Undergraduate Research Intern*

- Advisor: Woohwan Jung
- Contributed to project enhancing low-resource fine-grained named entity recognition

### **SE Lab** | Hanyang ERICA University, Ansan, South Korea Feb. 2021 - Jun. 2022

*Undergraduate Research Intern*

- Advisor: Scott Uk-Jin Lee
- Participant in a project about measuring technical dept in ML/DL systems
- Studied fundamentals of software engineering and ML/DL

TEACHING ASSISTANT

Introduction to Natural Language Processing   SKT Academy, Seoul, South Korea	Jul. 2024
AI Expert Class   Samsung, Seoul, South Korea	Jul. 2024
Natural Language Processing (AAI3301)   Yonsei University, Seoul, South Korea	Mar. 2024 - Jun. 2024
Introduction to Natural Language Processing   SKT Academy, Seoul, South Korea	Aug. 2023

AWARDS & HONORS

Best Paper Award   ACL'24	2024
Recipient of AI Graduate School Support Scholarship   Yonsei University	2023
Excellent Graduate   Hanyang ERICA University	2023
Participation Prize   KIISE Korea Computer Congress 2022	2022
Academic Excellence Scholarship   Hanyang ERICA University	2022-2, 2020-2, 2017-2, 2017-1