

Hyeongu Yun

· PH.D CANDIDATE ·

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Education

CURRENTLY A PH.D CANDIDATE IN DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Seoul National University

Advisor: Kyomin Jung, Professor, Seoul National University

Seoul, Republic of Korea

Mar 2015 - Aug 2022

B.S. IN DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Seoul National University

Seoul, Republic of Korea

Feb 2015

Summary of Researches

ALIGNING DEEP REPRESENTATIONS FOR MULTI-LINGUAL & MULTI-MODAL NLP

Multi-modal & Multi-lingual tasks require the ability to fuse different deep representations of Transformer from different languages or data types. My researches on this topic include 1) *Optimizing Centered Kernel Alignment to improve the cross-modal attention* and 2) *Developing a zero-shot method for multilingual CLIP* as an on-going research. The paper related to this topic will be appeared in LREC 2022.

MANIPULATING CONTEXT REPRESENTATION FOR TEXT GENERATION

Extracting and manipulating context information hidden in text are the keys to successful deep models for text generation such as machine translation. My researches on this topic include 1) *Developing a hierarchical Transformer encoder to incorporate context information over multiple sentences*, 2) *Developing a co-reference based contrastive learning scheme for context-aware MT*, and as an on-going research, 3) *Developing a data augmentation method with a context-controlled text generation model*. The papers related to this topic have appeared in WMT 2021 and AAAI 2020.

Internship Experiences

RESEARCH INTERN

at Microsoft Research Lab - Asia

· Research on Data augmentation with a context-controlled text generation model.

Oct. 2021 - Apr. 2022

RESEARCH INTERN

at NAVER Papago

· Research on neural machine translation for documents in HTML format. I developed a matching algorithm that finds an appropriate span for HTML tags on the translated documents corresponding to the original documents.

Jun. 2017 - Aug. 2017

Projects

ADDRESSING DATA SCARCITY ON MULTILINGUAL DOCUMENT-LEVEL NEURAL MACHINE TRANSLATION

With Microsoft Research Asia

2021 - 2022

DEVELOPMENT OF A DEEP-LEARNING BASED LANGUAGE REPRESENTATION FOR FAST AND EFFICIENT CONTEXT AWARENESS

With Samsung Electronics

2020 - 2025

DEVELOPMENT OF A DIALOGUE MODEL BASED ON MULTI-MODAL CONTEXTUAL UNDERSTANDING

With Samsung Electronics

2020 - 2021

DEVELOPMENT OF FAST AND EFFICIENT DEEP LEARNING BASED LANGUAGE REPRESENTATION FOR CONTEXT AWARENESS

With Samsung Electronics

2020 - 2020

DEVELOPMENT OF DEEP-LEARNING BASED MACHINE TRANSLATION FOR SMART CAMPUS

With Samsung Advanced Institute of Technology

Seoul National University - Samsung Electronics 2020 Industry-Academic Cooperation Excellent Paper Award, July 2020

2015 - 2020

DEVELOPMENT OF KOREAN NATURAL LANGUAGE PROCESSING SYSTEM AND ENGLISH-KOREAN MACHINE TRANSLATION SYSTEM

With Institute of Engineering Research, Seoul National University

2016 - 2018

DEVELOPMENT OF PRIVACY-PRESERVING TECHNOLOGY FOR PERSONALIZATION SERVICES

With Samsung Electronics

2015 - 2015

International Publications

PERTURBATION ROBUST METRIC FOR MULTI-LINGUAL IMAGE CAPTIONING

Yongil Kim, Hyeongu Yun, Seunghyun Yoon, Trung Bui, Yerin Hwang, and Kyomin Jung

COLING 2022

Under review process

GATED RELATIONAL TARGET-AWARE ENCODER AND LOCAL CONTEXT-AWARE DECODER FOR TARGET-ORIENTED OPINION WORDS EXTRACTION

Taegwan Kang, Segwang Kim, Hyeongu Yun, Hwanhee Lee, Kyomin Jung

IEEE Access

Under review process

MODALITY ALIGNMENT BETWEEN DEEP REPRESENTATIONS FOR EFFECTIVE VIDEO-AND-LANGUAGE LEARNING

Hyeongu Yun, Yongil Kim, Kyomin Jung

LREC 2022

Jun 2022, Marseille (France) and Online

CONTRASTIVE LEARNING FOR CONTEXT-AWARE NEURAL MACHINE TRANSLATION USING COREFERENCE INFORMATION

Yongkeun Hwang, Hyeongu Yun, Kyomin Jung

WMT 2021

Nov 2021, Punta Cana (Dominican Republic) and Online

PAIRWISE CONTEXT SIMILARITY FOR IMAGE RETRIEVAL SYSTEM USING VARIATIONAL AUTO-ENCODER

Hyeongu Yun, Yongil Kim, Taegwan Kang, Kyomin Jung

IEEE Access (SCIE, IF 3.745)

page 34067 - 34077, Volume 9, Feb 2021

ANALYZING AND CONTROLLING INTER-HEAD DIVERSITY IN MULTI-HEAD ATTENTION

Hyeongu Yun, Taegwan Kang, Kyomin Jung

Applied Sciences (SCIE, IF 2.474)

Volume 11, Issue 4, Feb 2021

IMPROVING CONTEXT-AWARE NEURAL MACHINE TRANSLATION USING SELF-ATTENTIVE SENTENCE EMBEDDING

Hyeongu Yun, Yongkeun Hwang, Kyomin Jung

AAAI 2020

Jan 2020, New York City (USA)

EFFICIENT TRANSFER LEARNING SCHEMES FOR PERSONALIZED LANGUAGE MODELING USING RECURRENT NEURAL NETWORK

Seunghyun Yoon, Hyeongu Yun, Yuna Kim, Gyu-tae Park, Kyomin Jung

AAAI Workshop on Crowdsourcing, Deep Learning and Artificial Intelligence Agents

Feb 2017, San Francisco, (USA)

Domestic Publications

IMPROVING VIDEO-QA SYSTEM THROUGH MODALITY ALIGNMENT - AWARDED AS THE BEST PAPER

Yongil Kim, Hyeongu Yun, Kyomin Jung

KCC 2021

Jun 2021

Talks & Teaching Experiences

TECH TALKS: CONTEXT REPRESENTATIONS IN NLP

@Kakao Enterprise

Jan 2022

TEACHING ASSISTANT: INTRODUCTION TO IoT · AI · BIG DATA

Taught by Prof. Kyomin Jung

@Seoul National University

Spring 2020, Spring 2021, Spring 2022

TEACHING ASSISTANT: PROGRAMMING METHODOLOGY CLASS

Taught by Prof. Kyomin Jung

@Seoul National University

Spring 2017, Spring 2018

TEACHING ASSISTANT: MACHINE LEARNING FOR GRADUATE STUDENTS

Taught by Prof. Kyomin Jung

@Seoul National University

Fall 2015

Skills & Interests

PROGRAMMING SKILLS

Python ★★★, Tensorflow ★★★★, Pytorch ★★★★★, C++ ★★☆☆