

Ellen Da-eun Lee

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RESEARCH INTERESTS	Affective Computing in Healthcare Applications My research interests mainly revolve around Affective Computing with NLP and Multi-Modal Learning about developing accessible AI healthcare systems to address tangible real-world challenges. <i>For additional information, please visit my webpage: [Research Highlights]</i>	
EDUCATION	Sungkyunkwan University , Republic of Korea	Mar. 2020 - Present
	<ul style="list-style-type: none">• Ph.D. in Applied Artificial Intelligence• Advisor: Prof. Jinyoun Han	
	Sookmyung Women's University , Republic of Korea	Mar. 2012 - Feb. 2017
	<ul style="list-style-type: none">• B.A. in Social Psychology	
PROFESSIONAL EXPERIENCE	University of South Florida , Tampa, FL, USA	Oct. 2023 - Present
	<ul style="list-style-type: none">• Visiting Scholar in Computer Science & Engineering• Advisor: Prof. Seungbae Kim	
	RaonData , South Korea	Jul. 2022 - Oct. 2022
	<ul style="list-style-type: none">• AI research Intern• Processing speech data to develop TTS models	
	Korea Psychological Autopsy Center , South Korea	Apr. 2018 - Aug. 2019
	<ul style="list-style-type: none">• Data Scientist• 5-year time-series analysis of suicides in South Korea	
PUBLICATIONS	(* = (co-) corresponding author, ** = equal contribution)	

— Conference

- [C-1] **Gesture-aware Automatic Speech Recognition System for Individuals with Speech Disorder**
- **Lee, D.**, Son, S., Jeon, H., You., D, Kim, S., & Han, J.*
 - **Work in Progress** - Aims to analyze the voice replacement gesture characteristics of patients with speech disorders and develop an Automatic Speech Recognition System by incorporating gesture information.
- [C-2] **An Effective Balancing approach for Gender Bias Mitigatiion**
- Park, S., Kim, M., **Lee, D.**, Park, E., & Han, J.*
 - **Work in Progress** - Aims to propose a data sampling approach to mitigate gender bias in state-of-the-art image captioning models.
- [C-3] **Detecting Bipolar Disorder from Misdiagnosed Major Depressive Disorder with Mood-Aware Multi-Task Learning**
- **Lee, D.****, Jeon, H**., Son, S., Park, C., Ahn, J., Kim, S., & Han, J.*
 - **Under Review** - Proposed a novel approach to identify Bipolar Disorder risk in individuals initially misdiagnosed with Major Depressive Disorder with Mood-Aware Multi-Task Learning using social media data.
- [C-4] **Fighting against Fake News on Newly-Emerging Crisis: A Case Study of COVID-19**
- Yang, M.**, Park, C.**, Kang, J., **Lee, D.**, Choi, D., & Han, J.*

- **The Web 2024** - The ACM Web Conference 2024
- [C-5] **A Dual-Prompting for Interpretable Mental Health Language Models**
 - Jeon, H.** , You, D.** , **Lee, D.**, Son, S., Kim, S., & Han, J.*
 - **CLPsych 2024** - The 9th Workshop on Computational Linguistics & Clinical Psychology
- [C-6] **Learning Co-Speech Gesture for Multimodal Aphasia Type Detection**
 - **Lee, D.****, Son, S.** , Jeon, H., Kim, S., & Han, J.*
 - **EMNLP 2023** - The 2023 Conference on Empirical Methods in Natural Language Processing
 - [\[PDF\]](#) [\[CODE\]](#) [\[VIDEO\]](#)
- [C-7] **Towards Suicide Prevention from Bipolar Disorder with Temporal Symptom-Aware Multitask Learning**
 - **Lee, D.**, Son, S., Jeon, H., Kim, S., & Han, J.*
 - **ACM KDD 2023** - The 29th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining
 - [\[PDF\]](#) [\[DATASET & CODE\]](#) [\[VIDEO\]](#)
- [C-8] **Detecting Suicidality with a Contextual Graph Neural Network**
 - **Lee, D.**, Kang, M., Kim, M., & Han, J.*
 - **CLPsych 2022** - The 8th Workshop on Computational Linguistics & Clinical Psychology
 - [\[PDF\]](#) [\[DATASET & CODE\]](#)
- [C-9] **COVID-19 Korean fake news detection using named entity and user reproduction information**
 - Park, C., Kang, J., **Lee, D.**, Lee, M. & Han** , Jinyoung
 - **HCLT 2021** - The 33rd Annual Conference on Human and Cognitive Language Technology
 - [\[PDF\]](#)
- [C-10] **Cross-Lingual Suicidal-Oriented Word Embedding toward Suicide Prevention**
 - **Lee, D.**, Park, S., Kang, J., Choi, D., & Han, J.*
 - **EMNLP Findings 2020** - The 2022 Conference on Empirical Methods in Natural Language Processing Findings
 - [\[PDF\]](#) [\[DATASET & CODE\]](#) [\[VIDEO\]](#)

— Journal

- [J-1] **Detecting depression on video logs using audiovisual features**
 - Min, K.** , Yoon, J.** , Kang, M., **Lee, D.**, Park, E., & Han, J.*
 - **HSSComms 2023** - Humanities & Social Sciences Communications 2023, 10, 788 (SSCI, JCR 2022 IF = 3.5)
 - [\[PDF\]](#)
- [J-2] **Machine learning for mental health in social media: bibliometric study**
 - Kim, J., **Lee, D.**, Park, E.*
 - **JMIR 2021** - Journal of Medical Internet Research 2023, 23(3), e24870. ISSN: 1438-8871 (SCIE, JCR 2019 IF=5.034, Q1 in Medical Informatics)
 - [\[PDF\]](#)

RESEARCH PROJECTS

- [P-1] **NRF International Mobility Program 2023, $MIST^1$ and NRF^2**
 - Research Associate (*in Charge*) Oct. 2023 - Sep.2024
 - Developing AI models for detecting Dementia using speech data
 - Collaborating with University of South Florida (USF)
 - Published 1 conference articles as a first author
- [P-2] **A Clinical Decision Support System for Retinal Disease Detection with Explainable AI, NRF^2**

	<ul style="list-style-type: none"> Research Associate Mar. 2023 - Feb. 2027 Analyzing image segmentation techniques on retinal disease detection 	
	<p>[P-3] Developing Artificial Intelligence Models and Korean Datasets for Detecting Suicide Risk, <i>NRF</i>²</p> <ul style="list-style-type: none"> Research Associate (<i>in Charge</i>) May. 2022 - Apr. 2024 Constructed novel Korean social media datasets, and developed suicide risk detection models Published 2 conference articles as a first author 	
	<p>[P-4] Developing Artificial Intelligence Application Models and Constructing Dataset for solving social issues, <i>ETRI</i>³</p> <ul style="list-style-type: none"> Research Associate (<i>in Charge</i>) Jun. 2021 - Aug. 2021 Analyzed and constructed mental health related Q&A dataset Implemented web application using Flask, Python web framework, and uploaded project tutorial video Published 1 conference articles as a first author 	
	<p>[P-5] Developing a Model for Detecting Fake News on COVID-19, <i>ETRI</i>³</p> <ul style="list-style-type: none"> Research Associate Jul. 2020 - Nov. 2020 Analyzed a social network using Youtube data and developed a model for detecting fake news on COVID-19 Published 1 journal articles as a third author 	
	**Sponsor	
	1 MIST: Ministry of Science and ICT, The government of the Republic of Korea	
	2 NRF : The National Research Foundation of South Korea	
	3 ETRI: Electronics and Telecommunications Research Institute, South Korea	
HONORS & AWARDS	<p>Best Researcher Award Jan. 2024</p> <ul style="list-style-type: none"> Dept. of Applied AI, Sungkyunkwan University <p>Scholarship for Korea-U.S. Research program (\$1,300) Jul. 2023</p> <ul style="list-style-type: none"> National Research Foundation of Korea (NRF) funded by the Ministry of Science & ICT Supported for being one of the 10 elite young female STEM researchers. <p>SIGKDD '23 Student Travel Award (\$800) Aug. 2023</p> <ul style="list-style-type: none"> The 29th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining <p>Graduate Scholarship (\$22,000; 1/2 Tuition) 2020 - 2023</p> <ul style="list-style-type: none"> Sungkyunkwan University 	
SERVICES	<p>Reviewer</p> <ul style="list-style-type: none"> ACL ARR '23 CLPsych '23 <p>Student Volunteer</p> <ul style="list-style-type: none"> ACM KDD '23 EMNLP '23 	
TEACHING FELLOW	<p>Teaching Assistant</p> <p>Sungkyunkwan University, Seoul, South Korea</p> <ul style="list-style-type: none"> DAI5019: Graph Mining, Graduate Course (TA) Fall 2022 AAI3005: Data Mining, Undergraduate Course (TA) Spring 2021 AAI3006: Machine Learning, Undergraduate Course (TA) Spring 2021 	

- DAI5002-01: AI Programming, Graduate Course (TA) Fall 2020
- SWE2022-01: Intro to Programming, Undergraduate Course (TA) Fall 2020

Directed Students

Sungkyunkwan University, Seoul, South Korea

- Undergraduate Research Program, Tutor
 - Machine-Generated Text Detection Fall 2023
 - Mental Status Detection Summer 2021

REFERENCES

Prof. Jinyoung Han (e-mail: jinyounghan@skku.edu)

- Associate Professor
- Department of Applied Artificial Intelligence, Sungkyunkwan University, Seoul, Republic of Korea

Prof. Seungbae Kim (e-mail: seungbae@usf.edu)

- Assistant Professor
- Computer Science and Engineering Department, University of South Florida, Tampa, FL, USA

Prof. Daejin Choi (e-mail: djchoi@inu.ac.kr)

- Assistant Professor
- Computer Science and Engineering Department, Incheon National University, Incheon, Republic of Korea