

# Hyojin Chin

Data Science Group, Institute for Basic Science (IBS), 55, Expo-ro, Yuseong-gu, Daejeon, Republic of Korea, 34126

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## Research Interest

**Understanding and Designing Human Interactions with Artificial Intelligence Systems,**

**Applied Data Mining** : Explaining and predicting unknown behavior by analyzing data,

**Natural Language Processing**, Hate speech detection and mitigation,

**Human-Computer Interaction**, Computational Social Science, Affective Computing,

## Education

### KAIST (Korea Advanced Institute of Science and Technology)

PH.D. IN KNOWLEDGE SERVICE ENGINEERING (INDUSTRIAL ENGINEERING DEPARTMENT)

Aug. 2015 - Aug. 2020

- Thesis: Understanding How a Conversational Agent Should Respond to Users' Verbal Abuse: A Multimodal Approach to Designing Emotionally Intelligent Agent

### KAIST (Korea Advanced Institute of Science and Technology) College of Business

M.B.A. IN INFORMATION AND MEDIA (FULL TIME)

Feb. 2013 - Feb. 2014

- Certificate of Excellence, 1st half Semester

### Seoul Women's University

BACHELOR OF SCIENCE IN FOOD AND MICROBIAL TECHNOLOGY

Mar. 1999 - Feb. 2004

- Double Major: Bachelor of Business Administration in Business Administration

## Professional Experience

### Institute for Basic Science (IBS)

Daejeon, S.Korea

SENIOR RESEARCHER

Sep.2020 - Present

- Chief Investigator: Dr. Meeyoung Cha
- Data Science Group, Center for Mathematical and Computational Sciences

### Innocean Worldwide (Hyundai Motor Company's global marketing communication enterprise)

Seoul, S.Korea

MARKETING DEPARTMENT, SENIOR ACCOUNT PLANNER

Apr.2011 - Aug.2015

- Analyze quantitative and qualitative data on Hyundai motor group's automotive products—gathered from user studies, surveys, and social media—and translate into tactical insights to support clients and project teams.
- Monitor online customer feedback on Hyundai motor group's automotive product brand and report on issues and trends.
- Develop KIA motors' global corporate brand communication strategies and communication guidelines.

### Samsung Electronics

Suwon, S.Korea

BRAND MARKETING DEPARTMENT, ASSISTANT MANAGER

Feb.2004 - Apr.2011

- Develop and execute global home appliance product launching strategies, including advertising, ATL, BTL and public relations.
- Develop global and regional brand management strategies for home appliance products.

### Samsung Electronics/ Intern

Seoul, S.Korea

YOUNG PLUS MEMBERSHIP, INTERN

Feb.2003 - Dec.2003

- Young Plus Membership is a program supported by Samsung Electronics that provides opportunities for limitless creative activities for students who have an interest in marketing or product design.

### SK Telecom / Intern

Seoul, S.Korea

SEGMENT MARKETING TEAM, MARKETING INTERN

Aug. 2002 - Feb. 2003

- Propose marketing and product ideas for the 10-29 age group.

# Publications

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## REFEREED JOURNALS

### Understanding the Categories and Characteristics of Depressive Moods in Chatbot Data

KIPS TRANSACTIONS ON SOFTWARE AND DATA ENGINEERING

- **Hyojin Chin**, Chani Jung, Gumhee Baek, Chiyoung Cha, Jeonghoi Choi, and Meeyoung Cha. 2022. Understanding the Categories and Characteristics of Depressive Moods in Chatbot Data. KIPS Transactions on Software and Data Engineering, 11, 9, (2022), 381-390. [KCI]

### Understanding the Effectiveness of a Conversational Agent with an Alternative Empathy Orientation and Emotional Expressivity in Mitigating Verbal Abuse

INTERNATIONAL JOURNAL OF HUMAN-COMPUTER INTERACTION

- **Hyojin Chin** and Mun Yong Yi (2022) Voices that Care Differently: Understanding the Effectiveness of a Conversational Agent with an Alternative Empathy Orientation and Emotional Expressivity in Mitigating Verbal Abuse, International Journal of Human-Computer Interaction, 38:12, 1153-1167. *Impact Factor=4.92* [SCIE]

### Job Preference Analysis and Job Matching System Development for the Middle Aged Class

JOURNAL OF INTELLIGENCE AND INFORMATION SYSTEMS

- Kim, Seongchan, Jincheul Jang, Seong Jung Kim, **Hyojin Chin** and Mun Yong Yi. 2016 .Job Preference Analysis and Job Matching System Development for the Middle Aged Class. Journal of Intelligence and Information Systems. 22(4), 247-264

## CONFERENCE PROCEEDINGS (INTERNATIONAL)

### An Experimental Study to Understand User Experience and Perception Bias Occurred by Fact-checking Messages

THE WEB CONFERENCE (WWW) 2021

- Sungkyu Park, Jamie Yejean Park, **Hyojin Chin**, Jeong-han Kang, and Meeyoung Cha. 2021. An Experimental Study to Understand User Experience and Perception Bias Occurred by Fact-checking Messages. In Ljubljana '21: 30th The Web Conference, April 19-23, 2021, Ljubljana, Slovenia. ACM, New York, NY, USA, 12 pages. <https://doi.org/10.1145/1122445.11224>

### Empathy Is All You Need: How a Conversational Agent Should Respond to Verbal Abuse

CHI 2020

- **Hyojin Chin**, Lebogang Wame Molefi, and Mun Yong Yi. 2020. Empathy Is All You Need: How a Conversational Agent Should Respond to Verbal Abuse. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20). Association for Computing Machinery, New York, NY, USA, 1-13.

### Explicit Content Detection in Music Lyrics Using Machine Learning

BIGCOMP 2018

- **Hyojin Chin**, Jayong Kim, Yoonjong Kim, Jinseop Shin, Mun Yong Yi. 2018 IEEE International Conference on Big Data and Smart Computing (BigComp), Shanghai, 2018, pp. 517-521

## MANUSCRIPTS UNDER REVIEW

### User-Chatbot Conversations During the COVID-19 Pandemic: A Study Based on Topic Modeling and Sentiment Analysis

JOURNAL OF MEDICAL INTERNET RESEARCH

- **Hyojin Chin**, Gabriel Lima, Mingi Shin, Assem Zhunis, Chiyoung Cha, Junghoi Choi, Meeyoung Cha

### Emotional Dumping: How User Characteristics Influence Verbal Aggression Against a Social Chatbot

CHI 2023

- **Hyojin Chin**, and Mun Yong Yi

## MANUSCRIPTS IN PREPARATION

### Patterns of emotional dumping on chatbots across cultures and platforms

TARGET: INTERNATIONAL JOURNAL OF HUMAN-COMPUTER INTERACTION

- **Hyojin Chin**, Hyeonho Song, Mingi Shin, Chani Jung, Gumhee Baek, Chiyoung Cha, Junghoi Choi, Meeyoung Cha

### Detecting Offensive Language in an Open Chatbot Platform

TARGET: EAACL, EUROPEAN CHAPTER OF THE ASSOCIATION FOR COMPUTATIONAL LINGUISTICS

- Hyeonho Song, Chani Jung, Mingi Shin, **Hyojin Chin**, Junghoi Choi, Meeyoung Cha

## EXTENDED ABSTRACT (INTERNATIONAL)

### Algorithm-driven news outcomes on political knowledge and MeToo-related rumor beliefs

ICA 2022

- Soo Young Bae, **Hyojin Chin**, and Meeyoung Cha. 2022. Algorithm-driven News Outcomes on Political Knowledge and Rumor Beliefs. In Extended Abstracts of the 2022 International Communication Association Conference.

### Do differences in national or political identity matter more for preferences?

IC2S2 2022

- Mark Whiting, Sungkyu Park, Meeyoung Cha, Sang Won Lee, **Hyojin Chin**, Mir Majid Molaie. Do differences in national or political identity matter more for preferences?. 8th The International Conference for Computational Social Science (IC2S2)

### A Study of Verbal Abuse Types and Conversational Agents' Response Styles

CHI 2019

- **Hyojin Chin** and Mun Yong Yi. 2019. Should an Agent Be Ignoring It? A Study of Verbal Abuse Types and Conversational Agents' Response Styles. In Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems (CHI EA '19). Association for Computing Machinery, New York, NY, USA, Paper LBW2422, 1–6.

### WatchOut: Facilitating Safe Driving Behaviors with Social Support

CHI 2017

- **Hyojin Chin**, Hengameh Zabihi, Sangkeun Park, Mun Yong Yi, and Uichin Lee. 2017. WatchOut: Facilitating Safe Driving Behaviors with Social Support. In Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems (CHI EA '17). Association for Computing Machinery, New York, NY, USA, 2459–2465.

## CONFERENCE PROCEEDINGS (KOREAN)

### Contrastive Learning for Hate Speech Detection

KCC 2022

- Chani Jung, Hyeonho Song, **Hyojin Chin**, Mingi Shin Meeyoung Cha. Contrastive Learning for Hate Speech Detection. Proceedings of the Korean Information Science Society Conference, 2022. vol 49 no. 01 pp. 1831–1833

### Unique Characteristics of Human-Chatbot Conversations and Their Potential for Mental Health Support

KCC 2022

- Assem Zhunis, Gabriel Lima, **Hyojin Chin**, Mingi Shin, Jeonghoi Choi, Chiyoung Cha, Meeyoung Cha. Unique Characteristics of Human-Chatbot Conversations and Their Potential for Mental Health Support. Proceedings of the Korean Information Science Society Conference, vol 49 no. 01 pp. 1076–1078

### Characteristics and differences of depressive moods in Korean and English Chatbot Data

HCI KOREA 2022

- **Hyojin Chin** G.Baek, C.Cha, J.Choi, M.Cha. 2022. Characteristics and differences of depressive moods in Korean and English Chatbot Data. Proceedings of HCI Korea 2022. pp 107-111

### A Study on the Categories and Characteristics of Depressive Moods in Chatbot Data

ACK 2021

- **Hyojin Chin**. 2021. G.Baek, C.Cha, H. Im, J.Choi, M.Cha. Proceedings of the Korea Information Processing Society Conference, 28(2) pp.993-996

### Hate Speech Detection in Chatbot Data Using KoELECTRA

HCLT 2021

- Mingi Shin, **Hyojin Chin**, Hyeonho Song, Jeonghoi Choi, Hyeonseung Lim, Meeyoung Cha. 2021. Proceedings of the 33th Annual Conference on Human and Cognitive Language Technology, pp.518-523

### A Study on the Influence of Contents of Internet News Comments on the Acceptance of New Car Products

KCC 2017

- **Hyojin Chin** and Mun Yong Yi. 2017. A Study on the Influence of Contents of Internet News Comments on the Acceptance of New Car Products. Proceedings of the Korean Information Science Society Conference. 605-608

### Job Preference and Selection Analysis of Senior People for Developing Senior Job Recommendation Algorithm

KCC 2016

- SeongJung Kim, Seongchan Kim, Jincheul Jang, **Hyojin Chin**, and Mun Y. Yi. 2016. Job Preference and Selection Analysis of Senior People for Developing Senior Job Recommendation Algorithm. Proceedings of the Korean Information Science Society Conference, 331-333.

### Requirement Analysis of Personalized Job Matching Service for Middle-Aged Adults in South Korea

HCI KOREA 2016

- Jincheul Jang, Dapeng Zhao, Seongchan Kim, **Hyojin Chin**, SeongJung Kim, and Mun Y. Yi. 2016. Requirement Analysis of Personalized Job Matching Service for Middle-Aged Adults in South Korea. Proceedings of the HCI Society of Korea, 68-69.

## Research Experience

### Human-Agent Interaction for Distributed Intelligence System

RESEARCH ASSISTANT AT KIRC FUNDED BY ETRI (ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE).

Oct. 2017 - Current

- Study human interaction with collaborative intelligence between people, objects, and space.
- Study issues related to transparency, uncertainty, motivation & trust in interaction between conversational agent and users.

### Planning and Design of Big Data-Based Expert Recommendation systems

RESEARCH ASSISTANT AT KIRC FUNDED BY NRF (NATIONAL RESEARCH FOUNDATION OF KOREA).

Mar. 2017 - Sep. 2017

- Develop a system that recommends the panel of experts who can review research projects by matching the similarities between the researcher's thesis and the research proposals' text content.

### Real Estate Price Evaluation Using Machine Learning

RESEARCH ASSISTANT AT KIRC FUNDED BY KAB (KOREA APPRAISAL BOARD).

July. 2016 - Dec. 2016

- Develop real estate price estimation model and apply machine learning algorithm.
- Analyze real estate data concerning land and house prices in South Korea.

### Implementation of Smart Data Town Platform with Big data & IOT

RESEARCH ASSISTANT AT KIRC FUNDED BY IITP (INSTITUTE OF INFORMATION & COMMUNICATIONS TECHNOLOGY PLANNING & EVALUATION).

Aug. 2015 - Mar. 2016

- Job Preference Analysis and Job Matching System Development for the Middle Aged Class.

## Academic Activities

**Paper Review**, CHI, CHI conference on human factors in computing systems, 2022

**Paper Review**, EMNLP, Conference on Empirical Methods in Natural Language Processing, 2022

**Paper Review**, CSCW, Conference On Computer-Supported Cooperative Work And Social Computing, 2021

**Paper Review**, IJHCI, International Journal of Human-Computer Interaction, 2021-22

**Program Committee**, WWW, The World Wide Web Conference, 2021

**Teaching Assistant, Business Intelligence**, KAIST KSE521, 2020 Spring, 2017 Fall

**Teaching Assistant, Human Decision Making and Support**, KAIST KSE612, 2019 Fall, 2018 Spring.

## Guest Lecturer

### Topic: Social Computing for Mental Health

CLASS: SYSTEM HEALTH INTRO

2022. 04

- College of Nursing, Ewha Womans University

### Topic: Methodologies for Social Computing for Mental Health Research

CLASS: NURSING INFORMATION AND E-HEALTH

2022. 05

- College of Nursing, Ewha Womans University

## Copyright

**Copyright Number: C-2016-009103**, Job classification table for middle-aged adults' personalized job matching. **Hyojin Chin**, J. Jang, SC. Kim, SJ. Kim, and Mun Y. Yi, April.12.2016

**Copyright Number: C-2016-006607**, Personalized job matching algorithm for middle-aged adults. SJ Kim, SC. Kim, J. Jang, **Hyojin Chin**, and Mun Y. Yi, March.15.2016.

## Awards

### ACADEMIC

- 2022 **Best Paper Award**, HCI Korea 2022 Conference
- 2019 **1st Prize**, Best Presentation Award at the Knowledge Service Engineering Student Colloquium, KAIST
- 2014 **Leadership Award**, KAIST College of business
- 2013 **The Best Student of The Year**, Dean's Award of KAIST College of Business
- 2000 **2nd Prize**, English Speech Contest of Seoul Women's University

### INDUSTRY

- 2012 **3rd Prize**, New Business Idea Competition by Innocean Worldwide
- 2004 **Outstanding Service Award**, Samsung Electronics Leadership Center
- 2003 **Excellence Award**, The 2nd Future Digital Appliances Idea Competition by Samsung Electronics: Proposal for digital home appliance ideas considering future residential trends and lifestyle changes.

## Extracurricular Activities

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### KAIST Run: Fundraising Event Aimed at Providing Science Education Programs for Children from Multicultural Families in Korea

EVENT PLANNING AND DESIGN

July, 2013 - May, 2014

- 100 our institution's students and faculty members participated in the Chuncheon Marathon Race to raise a science education fund for children in multicultural families.
- 600 people donated. We raised 20 million won through fundraising in 3 months.
- A science education program was provided to 80 multicultural children (2014.05.31 06.01).
- Media Coverage: Chosun Ilbo, 23rd Oct. 2013. <http://goo.gl/NNQvPB/>

### Crowdfunding-Based Rural Aid Project: 'Daepungnyeong'

PRODUCT PLANNING, NAMING, AND MARKETING

Aug. 2014 - Mar. 2015

- Helped farmers by repackaging and rebranding fruits that were in danger of being discarded due to too much harvest and sold the products through crowdfunding sites.
- Media Coverage: Chosun Ilbo, 17th Mar. 2015. <https://bit.ly/3ieTOTs>

### Strategic Entertainment and Media Management Program

Los Angeles, USA

UNIVERSITY OF SOUTHERN CALIFORNIA MARSHALL SCHOOL OF BUSINESS

Aug. 2013

- Certificate of Excellence

### Korea Indie Band's Brand Identity Consulting Project

RESEARCH DESIGN AND QUANTITATIVE SURVEY DESIGN

Oct. 2013 - Jan. 2014

- Conducted a brand identity survey on the images of seven famous Korean indie bands.
- Suggested the brand identity of the rookie band 'Rock and Roll Radio' based on the survey results.
- Media Coverage: Herald Biz, 7th May. 2014. <https://bit.ly/2XZ4axo>

### New Employee Training Programs' Facilitator for 200 New Employees of Samsung Group

TRAINING FACILITATOR

Jan. 2007 - Mar. 2007

### 7th Busan International Film Festival

VOLUNTEER FOR GUEST SERVICE TEAM

Sep. 2002 - Nov. 2002

## Certificate

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- 01 **Survey Analyst, Junior**, National Technical Qualification Certificate (No.16201132371H)
- 02 **Korean History Proficiency Test, Level-2**, National History Compilation Committee (No.45-235288)
- 03 **Computer Specialist in Spreadsheet & Database Level-2**, National Technical Qualification Certificate (No.03-K9-017407)

## Skills

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### Data Science

PYTHON, R, SPSS, SQL, JAMOVI, WEKA

- Statistical Analysis, Data Mining, Data Visualization, Machine Learning, Natural Language Processing

### User Research Methods

HCI RESEARCH TOOLS

- Interviewing (In-depth & Focus Group), Participant-Observation, Survey Design, Experiment Design, Usability Test

### Design Conversational Agent

GOOGLE DIALOGFLOW, IBM WATSON, GOOGLE ASSISTANT

- Develop a text-base and voice-base conversational agents.

## References

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- Dr. Mun Yong Yi** Professor, Graduate School of Data Science, Korea Advanced Institute of Science and Technology, [munyi@kaist.ac.kr](mailto:munyi@kaist.ac.kr)  
**Dr. Meeyoung Cha** Associate Professor, School of Computing, Korea Advanced Institute of Science and Technology, [meeyoungcha@kaist.ac.kr](mailto:meeyoungcha@kaist.ac.kr)