

Hee Jeong Han

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Education

Pennsylvania State University

Doctor of Philosophy in Informatics

University Park, Pennsylvania, U.S.A

Aug. 2020 - Aug. 2025

- Advisor: Saeed Abdullah
- Dissertation: Designing Digital Health Technologies for Serious Mental Illnesses: Enabling Self-Management and Collaborative Care

University of California, Irvine

Master of Science in Computer Science

Irvine, California, U.S.A

Sep. 2017 - Jun. 2019

- Advisor: Nikil Dutt
- Thesis: Objective Stress Monitoring based on Wearable Sensors in Everyday Settings

Ewha Womans University

Bachelor of Science in Computer Science and Engineering

Seoul, Korea

Mar. 2012 – Feb. 2017

- Advisor: Dong Sub Cho
- ABEEK (Accreditation Board for Engineering Education of Korea)

Research Experience

Dartmouth Center for Technology and Behavioral Health

Department of Biomedical Data, Geisel School of Medicine, Dartmouth

Hanover, New Hampshire, U.S.A

Postdoctoral Fellow

Aug. 2025 - present

- Designing and implementing next-generation AI-driven mental health interventions by leveraging multimodal data analysis to develop and evaluate adaptive, personalized support systems for undergraduate well-being using generative AI and passive sensing.

Wellbeing & Health Innovation (WHI) Lab

College of Informatics Science and Technology, Pennsylvania State University

University Park, Pennsylvania, U.S.A

Graduate Research Assistant

Aug. 2020 - Aug. 2025

- Conducted qualitative research to address challenges faced by care partners of individuals with bipolar disorder, designing collaborative fintech solutions with a user-centered approach.
- Designed and tested conversational AI agents for mental health support, including usability studies to evaluate user satisfaction.
- Gained experience understanding multiple perspectives, including clinicians, individuals with mental illness, and their care partners.
- Developed deep learning models for analyzing mental health symptoms through text data (e.g., PTSD, dementia).
- Built a Chrome extension tool that informs users about their disclosing behaviors. It is powered by a BERT-based objective disclose detection model.

Dutt Research Group

Department of Computer Science, University of California, Irvine

Irvine, California, U.S.A

Graduate Research Assistant

Jun. 2018 – Jul. 2019

- Developed stress-monitoring systems utilizing PPG, ECG, and GSR sensors, optimizing usability in real-world environments.
- Designed and implemented machine learning algorithms for wearable health monitoring.
- Analyzed motion artifacts affect stress assessment and filter the low-confidence readings to minimize false alarms, using deep learning techniques such as CNNs

Computer Architecture and System Design Laboratory

Department of Computer Science and Engineering, Ewha Womans University

Seoul, Korea

Undergraduate Research Assistant

Aug. 2015 – Jun. 2016

- Developed a pedestrian counting system incorporating Adaptive-DBSCAN and novel hardware designs (F-pad and Sonic-Bar)

Publications

Hee Jeong Han, Johnna Blair, Jeff Brozena, Dahlia Mukherjee, Erika F. H. Saunders, and Saeed Abdullah, "Designing Collaborative Fintech: Identifying Care Partner Goals and Challenges for Supporting the Financial Lives of Those with Bipolar Disorder," in *CHI 2025 Workshop on the Future of Money and HCI*, 2025

Jeff Brozena, Johnna Blair, **Hee Jeong Han**, Manar Hesino, Dahlia Mukherjee, Erika F. H. Saunders, and Saeed Abdullah, "The Currency of Mood: The Use of Open Banking APIs to Better Understand Spending and Bipolar Disorder," in *CHI 2025 Workshop on the Future of Money and HCI*, 2025

Hee Jeong Han, Sanjana Mendu, Beth K Jaworski, Jason E Owen, and Saeed Abdullah, "Assessing Acceptance and Feasibility of a Conversational Agent to Support Individuals Living with Post-traumatic Stress Disorder," in *Digital Health*, 10, 2024

Hee Jeong Han, Sanjana Mendu, Beth K Jaworski, Jason E Owen, and Saeed Abdullah, "Preliminary Evaluation of a Conversational Agent to Support Self-management of Individuals Living with PTSD: An Interview Study with Clinical Experts," in *JMIR Formative Research*, 7, e45894 2023

Hee Jeong Han, Suhas BN, Ling Qiu, and Saeed Abdullah, "Automatic Classification of Dementia using Text and Speech data," in *Multimodal AI in Healthcare*, pp. 399-407. Springer, Cham 2022

Hee Jeong Han, Sanjana Mendu, Beth K Jaworski, Jason E Owen, and Saeed Abdullah, "PTSDDialogue: Designing a Conversational Agent to Support Individuals with Post-Traumatic Stress Disorder," in *Adjunct Proceedings of the 2021 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2021 ACM International Symposium on Wearable Computers (UbiComp '21)* 2021

Hee Jeong Han, Sina Labbaf, Jessica L. Borelli, Nikil Dutt, and Amir M. Rahmani, "Objective stress monitoring based on wearable sensors in everyday settings," in *Journal of Medical Engineering & Technology* 44, no. 4: 177-189, 2020

Hee Jeong Han, Miso Kwon, You Hyun Kang, Dong Sub Cho, "Pedestrian Management System for Real-time Pedestrian Detection," in *Proceedings of Korea Multimedia Society Conference of the Spring*, 2016

- **Best Paper Award**

Hee Jeong Han, You Hyun Kang, Miso Kwon, Dong Sub Cho, "Pedestrian Pattern Classification For the Pedestrian Counting Systems using Key Matrix," in *Proceedings of Korea Computer Congress*, 2016

- **Best Paper Award**

Hee Jeong Han, You Hyun Kang, Miso Kwon, Dong Sub Cho, "Pedestrian Safety Management Systems based on Multiple-input enabled F-pad," in *Proceedings of The Korean Institute of Electrical Engineers(KIEE) Summer Conference*, 2016

You Hyun Kang, Miso Kwon, **Hee Jeong Han**, Dong Sub Cho, "A System on the Formation of Pedestrian Pattern for Pedestrian Volume Analysis," in *Proceedings of The 2016 Spring Conference of the Korea Information Processing Society (KIPS)*, 2016

Miso Kwon, You Hyun Kang, **Hee Jeong Han**, Dong Sub Cho, "Adaptive for time-varing clustering DBSCAN," in *Proceedings of 2016 Information and Control Symposium*, 2016

Presentations

Hee Jeong Han, "Large Language Models for Context-Aware Conversational Decision-Making in Digital Mental Health," *Symposium: Building an Intelligent Mental Health App: Integrating Passive Sensing, Prediction, and Conversational AI Interventions, Technology in Psychiatry Summit (TIPS)*, 2025

Posters

Hee Jeong Han, Suhas BN, Ling Qiu, and Saeed Abdullah, "Dementia Diagnosis using Text and Speech Data," in *ICDS Fall 2022 Symposium: Data Science, AI, and a Sustainable, Resilient, and Equitable Future*, 2022

Hee Jeong Han, Suhas BN, Ling Qiu, and Saeed Abdullah, "ACOUSTICS : AutomatiC classificatiOn of sUbjectS with demenTia and healthy Controls using text transcriptions and Speech data," in *36TH AAAI Conference on Artificial Intelligence*, 2022

Extracurricular Activities

Grace Hopper Celebration

Attendee

Philadelphia, Pennsylvania, USA

Oct. 2024

- World's largest tech conference for women and nonbinary people, focused on technology and innovation.

W3PHIAI-22 Data Hackathon (Hackathon/Challenge)

First Winner

Mar. 2022

- Built an ensemble model with two deep learning-based architectures for text and speech analysis. The model achieved 89.8% accuracy when classifying individuals with dementia and health controls.

Ubicomp/ISWC 2021

Student Volunteer

Sep. 2021

- Assisted with the organization and management of the conference, supported speakers and attendees, and facilitated smooth event operations.

CRA-WP Grad Cohort for Women

Attendee

Apr. 2021

- A mentoring workshop that supports women graduate students in computing, offering guidance on academic and career advancement, networking, and professional development.

International Summer Undergraduate Research Fellowship

Mentor

University of California, Irvine

Jun. 2018 – Aug. 2018

Health Technology Assessment International 10th Annual Meeting

Student Volunteer

Seoul, Korea

Jun. 2013

- Aided foreign speakers and audience with administrative support, and managed keynote back-up system.

Career Mentoring

Leader of IT section Team

Ewha Womans University

Mar. 2013 – Jun. 2013

- Researched Korean software and network equipment market from a prospected technology report, and also researched future technology such as Google Glass and 3Doodler.

Skills

AI & Machine Learning

Deep learning (transformers, CNNs, RNNs), self-supervised learning, time-series analysis, NLP for health applications.

Research Methods

User-Centered Design, Experimental Research, Usability Testing, Clinical Data Analysis, Human Subjects Research.

Programming & Tools

Python, MATLAB, R, C/C++, Java, JavaScript, TensorFlow, PyTorch, SQL, Git, LATEX (Overleaf)

Data Science & Engineering

Statistical modeling, data visualization, large-scale healthcare data processing.

Teaching Experience

2025 Spring	IST 597: Human Centered Artificial Intelligence
2023 - 2024	IST 525: Computer-Supported Cooperative Work
2023 - 2024	IST 311: Object-Oriented Design and Software Applications
2023 Fall	IST 520: Foundations of Human-Centered Design
2022 - 2023	HCDD 340: Human-Centered Design for Mobile Computing
2022 Fall	HCDD 264: Design Practice in Human-Centered Design and Development

Awards

2016	Silver Prize 2016 Ewha Engineering Student Portfolio Contest
2014	Hoakipa Scholarship University of Hawaii at Manoa <i>Manoa, Hawaii, U.S.A</i>
2012	Merit Scholarship Megastudy Group <i>Seoul, Korea</i>

Work Experience

Mother Tongue

Editor, Writer

Seoul, Korea

Feb. 2017 – Aug. 2017

- Edited “Visual Phonics” for children learning English phonics first with images and songs. I wrote and edited “Middle School English Grammar 3800” series for 7th to 9th grade students.

Certification

Level 2 of Test Of Practical Competency in ICT (TOPCIT)

TOPCIT is a performance-evaluation-centered test designed to diagnose and assess the competency of ICT specialists and SW developers critically needed to perform jobs on the professional frontier.

Accreditation Board for Engineering Education of Korea (ABEEK)

Korean version of Accreditation Board for Engineering and Technology (ABET)

References available upon request.