HYEMI SONG

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Summary

Research interests: Information Visualization, HCI, Human-Centered AI, and Immersive Analytics.

Main topic: The complex interplay between Natural Language and Data Visualization in XR within generative AI-powered immersive analytics. My current papers are mostly related to "Speech-driven Immersive Analytics: GenAI-grounded Sensemaking Perspective", under the supervision of Dr. Amitabh Varshney. For my dissertation, I am exploring 'Speech-driven Immersive Analytics: A GenAI-grounded Sensemaking Perspective,' with a focus on human–analytic system communication by characterizing users' analytic intent and systems' proactive responses through the examination of speech-driven multimodal interactions in immersive analytics environments.

Immigrant status: US Permanent Resident (EB-1A Extraordinary Ability, self-petitioned, 2021).

Educational background

Ph.D. Computer Science, University of Maryland College Park, 2022 - Present

Master of Science, Computer Science, University of Maryland College Park, 2022-2024

Master of Fine Arts, Digital + Media, Rhode Island School of Design

Bachelor of Science, Molecular Biology, The Catholic University of Korea

Publications

J2 **Hyemi Song**, Matthew Johnson, Kirsten Whitley, Eric Krokos, Amitabh Varshney — Embodied Natural Language Interaction (NLI): Speech Input Patterns in Immersive Analytics, IEEE Transactions on Visualization and Computer Graphics (TVCG), IEEEVIS 2025 (acceptance rate of 24.4%), LINK

P2 **Hyemi Song**, Sai Gopinath, Zhicheng Liu — Intents, Techniques, and Components: a Unified Analysis of Interaction Authoring Tasks in Data Visualization, Master's scholarly paper, University of Maryland, Preprint, 2024, (Invited for fast-track submission to CGF journal via EuroVis 2023), LINK

J1 Hannah K. Bako, Xinyi Liu, Grace Ko, **Hyemi Song**, Leilani Battle, Zhicheng Liu — Unveiling How Examples Shape Data Visualization Design Outcomes, IEEE Transactions on Visualization and Computer Graphics (TVCG), IEEEVIS 2024 (acceptance rate of 23.2%), LINK

P1 Zongxia Li, Paiheng Xu, Fuxiao Liu, **Hyemi Song** — Towards understanding in-context learning with contrastive demonstrations and saliency maps, Preprint 2023, LINK

T1 **Hyemi Song** — Walking in a Place, Walkestra, Rhode Island School of Design, MFA Thesis 2016, LINK

Books & Book chapters

B2 **Hyemi Song**, Solar System, Annual Student Artists' Book Juried Contest, Rhode Island School of Design, 2015

B1 Steven Heller, Rick Landers, Raw Data, (Published Works: The temperature of my mind, Visualizing works), 2014

Research and Professional experience

University of Maryland College Park, USA, 2022 - Present
Position: Research Assistant (Full-time, Advisor: Dr. Amitabh Varshney)

Microsoft, Redmond, USA, 2019 - 2022
Position: Senior Designer (Full-time) - Specialized in Data Visualization (Azure Machine Learning, Responsible AI)

Datadog Inc, New York, USA, 2017 - 2019
Position: Product Designer (Full-time) - Specialized in Data Visualization

Massachusetts Institute of Technology, MIT Senseable City Lab, Cambridge, USA, 2016 - 2017
Position: Research Fellow (Full-time, Data Visualization Specialist)

NAVER Corporation, Seoul, Korea, 2011 - 2014
Position: UX Researcher (Full-time) - Social Media, Search Engine

VINYL Interactive, Seoul, Korea, 2010 - 2011
Position: UX Researcher (Full-time) - New Media Art Installation

2015 Brothers, Seoul, Korea, 2009 - 2010
Position: Art Director (Full-time) - Advertisement

PXD, Seoul, Korea, 2008 - 2009
Position: UX Researcher (Full-time) - Web/Mobile Operation Systems and Applications

Kiz Entertainment, Seoul, Korea, 2004
Position: Animator (Full-time)

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eyeballNYC, New York, USA, 2015
Samsung Electronics, Seoul, Korea, 2007
Cheil World Wide, Seoul, Korea, 2006
Positions in three companies: Design Intern (Full-time)

Teaching experience

University of Maryland College Park, 2022 Spring/Summer, 2023 Spring/Summer/Fall
Position: Teaching Assistant, Class: Introduction to Data Science, Web Application Development with JavaScript
Rhode Island School of Design, 2016 Winter
Position: Instructor, Class: Measuring the Universe (2016 RISD Winter Session)

Grants, Fellowships & Scholarships

University of Maryland College Park, USA - Travel Grant, 2025 ($1,600)
University of Maryland College Park, USA - Fellowship, Future Faculty Program, 2025-Present ($2,000)
ACM DIS, USA - Awarded one-year ACM Professional Membership for paper review contribution, 2024
IEEEVIS, USA - Inclusive and Diversity Scholarship, 2023 ($1,000, Registration Fee Weaver)
University of Maryland College Park, USA - Assistantship, 2022-Present
University of Maryland College Park, USA - Dean's Fellowship, 2022-2024 ($5,000)
Massachusetts Institute of Technology, USA - Fellowship, 2016 - 2017 ($40,000)
Rhode Island School of Design, USA - Assistantship/Fellowship, 2014 - 2016
Samsung Art & Design Institute, Korea - Scholarship, 2007 ($4,000)

Community service

IEEEVIS - Student Volunteer, 2025
ACM CHI- Session Chair (Case Studies), 2025, (declined due to visa issue)
ACM CHI- Reviewer, 2024 - Present, (Full papers: 2024, Case Studies: 2024)
PacificVis- Reviewer, 2024 - Present, (Full papers -TVCG Journal: 2024)
ACM Designing Interactive Systems- Reviewer, 2024 - Present, (Full papers: 2024)
IEEEVIS - Reviewer, 2023 - Present, (Full papers: 2023/2025, Short papers: 2024)
UMD Graduate Admissions Committee, 2023
PacificVis - Juror, 2022 - 2023
IEEEVIS Arts Program - Program Committee, 2018 - Present (Full papers, Exhibitions, Pictorials)
A' Design Award & Competition, Italy - Jury Member, 2018 - 2022
Brown University, Computer Science Department, USA - Portfolio Reviewer, 2019 - 2021
Apexart, USA - Jury Member, 2017

Mentoring service

Yutian Zhang - PhD, UMD, CS
Peer Mentorship UMD, 2025
Saumya Verma - Master, UMD, iSchool
User Research Methods, 2024
John Robert Cole - Master, UMD, CS
Peer Mentorship UMD, 2024

Invited talks, Lectures, Workshops (Selected)

Ohio State University Ohio, USA, 2022
Lecture: Data and Human Communication
GyeongGi Cultural Foundation, Seoul, Korea, 2021
Lecture: Data as a communication medium: art, design, and human
San Jose State University San Jose, USA, 2021
Lecture: Data and Human Communication
Workshop: Measuring the temperature of my mind

Awards

ACM Designing Interactive Systems, USA - Awarded for Best Paper Review Contribution, 2024
IEEE Arts Program, Melbourne, Australia - Accepted for exhibition, 2023 (Project: Solar System)
A'Design Award and Competition, Italy - Winner (Gold), 2018-2019
Information is Beautiful Awards, USA - Long List, 2018

World Changing Ideas Awards (by Fast Company), USA - Finalist, 2018
IEEE Arts Program, Berlin, Germany - Accepted for exhibition
A'Design Award and Competition, Italy - Winner (Iron), 2016-2017
53rd American Graphic Design Awards, GDUSA, USA -Winner (Student), 2016
Spark International Design Awards, USA - Finalist, 2016
Annual Student Artists' Book Juried Contest, USA - Accepted for exhibition and publication at RISD Fleet Library, 2015
Adobe Design Achievement Awards, USA - Semifinalist, 2008, 2015, 2016
Adobe Design Achievement Awards, USA - Honorable Mention 2007
IF Design Award, USA - Winner, 2010
Good Design Award, Japan - Winner, 2010
Seoul Design Olympiad 2009, Korea - Winner (Honorable Mention), 2009
SADI Graduation Award, Korea - Experimental Portfolio Winner, 2008
11th Environmental Management Corporation Award, Korea - Winner, 2006

Media appearance

Monthly Design (Oldest Korean Design Magazine), Seoul, Korea, 2018
Feature Interview, Title - Data Visualization Designer, Hyemi Song / LINK
Data Vis Today, USA, 2018
Feature Interview, Podcast (Episode 13) / LINK
IdN, Hong Kong, 2018
Featured article (Project: CityWays), IdN is an international Design Magazine / LINK
The Guardian, USA, 2016
News Article (Project: Urban Exposure), Data Visualization at MIT Senseable City Lab / LINK
Visual Loop, Brazil, 2012
Featured article, Title - Finding stories of data visualization from twitter / LINK
Information Aesthetics, USA, 2011
Featured article, Title - Visualizing Works: Hyemi Song's Innovative Portfolio / LINK
Visualising Data, USA, 2011
Featured article, Title - Visualizing Works: Hyemi Song's Innovative Portfolio
Sadi Vision, Korea, 2011
Featured article (Project: Visualizing Works)
IF Online Gallery, USA, 2010
IF Online Gallery (Project: KT Olleh Square)
2009 Seoul Design Olympiad, Korea, 2009
Annual publication for winners
Adobe Design Achievement Award Online Gallery, USA, 2008
ADAA Online Gallery (Project: The temperature of my mind

Exhibitions

IEEE Arts Program, Melbourne, Australia, 2023 (Project: Solar System)
Design Korea Festival 2020, Design Beyond Data, @Coex, Seoul, Korea, (Declined) 2020
IEEE Arts Program, Berlin, Germany, 2018
A'design Award Winner exhibition, @Mood, Italy, 2017
Shenzhen Design Week, @Shenzhen Convention Center, China, 2017
RISD Nature Lab anniversary exhibition, @Waterman Gallery, USA, 2017
Internet Festival, @Waterman Gallery, Pisa , Italy, 2016
RISD Graduate Exhibition, @Providence Convention Center, USA
Dark Matter, @RISD Sol Koffler Gallery, USA
Image Landscapes, @RISD Gelman Gallery, USA
Annual Student Artists' Book Exhibition, @RISD Fleet Library, USA
2009 Seoul Design Olympiad, @Jamsil Main Stadium, Korea
Sharing Experience 2009, @Zero one center Gallery, Korea
Onepiece Magazine Ceremony Party 500, Korea
Reviewing Hanul Exhibition, @Space Hiut, Korea
GUANGZHOU Design Korea Exhibition, Guangzhou, China
2nd D.I.P. Exhibition, @SADI Space Gallery, Korea

21st D.I.P. Exhibition, @SADI Space Gallery, Korea
SADI Graduation Exhibition, @SADI Space Gallery, Korea
Hanul Exhibition, @Shinhan Gallery, Korea
Chelsea College of Arts Graduation Exhibition, @Hugon Road Gallery, UK

Permanent collections

Walking in a Place Walkestra, Book, RISD Fleet Library, Rhode Island School of Design, 2016
Solar System, Art Book, RISD Fleet Library, Rhode Island School of Design, 2015

Skillsets

Front, Backend, Data Visualization, Immersive Analytics — Javascript, React, Redux, Express.js, MongoDB, Python, HTML, CSS, C#, D3js, Vegalit, Matplotlib, Three.js, PyTorch, Unity
Design & Research — Graphic Design, UX/UI design, Interaction Design, UX Research, Academic Research