Ruotong Gao

College Park, Maryland

(734)450-8622 | ruotongg@umd.edu | [Website](#)| [Github](#)

EDUCATION

University of Maryland, College Park, MD   2024 - 2029
Ph.D. in Information Studies, Advisor: Dr. Stephanie Valencia Valencia
- theAACtelier Lab

University of Michigan, Ann Arbor, MI   2021 - 2024
M.S. in Information Science
- Marginality in Sociotechnical Systems Research Lab (MiSTS)

Shanghai Jiao Tong University (SJTU), Shanghai, China   2017 - 2021
B.E. in Computer Science and Technology
- Minor: Industrial Design
- Advanced Network Lab (ANL) | Cross Media Language Intelligence Lab (X-LANCE)
- *Thesis: Self-Supervised Audio Embedding for Depression Detection*

RESEARCH INTERESTS & SKILLS

My research focuses on communication technology, augmentative and alternative communication, as well as wearable technology and the Internet of Things (IoT) as tools for communication.

I'm interested in conducting mixed-method research in HCI that combines user studies, behavioral analysis, and quantitative metrics.
- **Quantitative Research:** Data Manipulation & Analysis, Data Visualization, Survey, Causal Analysis
- **Technical Skills:** AI & Machine Learning, Internet of Things (IoT), Embedded Software Development, Computer Vision, Front-End Development
- **Qualitative Research:** Semi-structured Interview, Empathy Mapping, Qualitative Analysis
- **Prototyping:** UX/UI Design, 3D Modeling (Rhino, Sketch), 3D printing, AR/VR Prototyping

RESEARCH EXPERIENCE

User Customization in Augmentative and Alternative Communication   2024 -
Principal Investigator, Advisor: Dr. Stephanie Valencia Valencia, College of Information, UMD
- Designing and leading a mixed-methods study on customization in AAC, including interviews, design activities, and qualitative analysis to understand how users co-create and adapt AAC tools to fit their communication needs.

AiRPLAY: Inclusive AR Game Design & Development   2021 - 2023
Research Assistant, Advisor: Roland Graf, Hun Seok Kim, Michael Nebeling, School of Electrical & Computer Engineering (ECE), School of Information, Stamps School of Art & Design, U-Michigan
- Collaborated with kinesiology experts to co-design open-source, inclusive, and engaging AR games. Organized periodic game-play testing events to gather feedback from children and their caregivers, enhancing the user experience and inclusivity of the games.

Self-Supervised Audio Embedding for Depression Detection 2020 - 2021
Principal Researcher, Lab: X-LANCE, Advisor: Dr. Mengyue Wu, Department of Computer Science, SJTU
- Designed and developed an innovative self-supervised audio embedding pre-training task with Keras and PyTorch based on BERT for feature engineering.
- Link: https://github.com/ruotongg/depression_detection

PUBLICATIONS & PRESENTATIONS

Presentations
- *Multilingual AAC and Translanguaging*, Fourth East Asian AAC Conference, Jan 2026.
- *Quality of Life in Augmentative and Alternative Communication (AAC) Research: A Systematic Literature Review.* HCIL Symposium (Lightning Talk), University of Maryland, College Park, June 2025.
- *User Customization in AAC.* AAC Think Tank 2025, Penn State University, May 2025.

Workshop
- *Recruiting Participants for Accessibility Research (ASSETS 25, virtual attendance)*

COMMUNITY SERVICE AND OUTREACH

AAC Support Group in the DMV Area, co-organizer	2025 -
Including Disability Global Summit 2025, volunteer	2025
Language Science Fair @Planet Word Museum, volunteer	2025
INFO DEI Strategic Plan - Research and Teaching, member	2024
UMD Mental Health Awareness Week, volunteer	2024
Disability Culture at U-M, member	2022 - 2024
U-M Council for Disability Concerns, member	2022 - 2024

HONORS AND GRANTS

ArtsAMP Graduate Student Research Grant (2025)	$2,000
Rackham Graduate Student Research Grant (2022)	$1,500
UMSI Master's Thesis Option Program (MTOP) Research Grant (2022)	$1,500
Arts Integrative Interdisciplinary Research (AiiR) Grant (2022)	$3,000
SJTU Undergraduate Participation in Research Program (PRP) Grant (2021)	$1,200
National Undergraduate Program for Innovation and Entrepreneurship Grant (2020)	$2,500

TEACHING EXPERIENCE

Graduate Student Instructor

SI 649: Information Visualization	Winter 2023
SI 339: Web Design, Development, and Accessibility	Fall 2022
SIADS 622: Information Visualization II	Spring/Summer 2022