Mengyu Zhong, Social Robotics/ Multi-modal Deep Learning

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PROFILE

PhD Student at Uppsala Social Robotics Lab, interested in Social Robotics, Machine Learning, and AI for healthcare.

EDUCATION

Feb 2021 — Present

PhD in Computer Science , Uppsala University — Sweden

Supervised by Ginervra Castellano

Thesis title: Socially assistive robotics: robot-assisted diagnosis of women's depression around childbirth

Sep 2018 — Dec 2020

MSc in IT and Cognition, University of Copenhagen — Denmark

GPA 11.6/12

Aug 2019 — Dec 2019

Exchange student, University of North Carolina at Chapel Hill — America

Jan 2019 — Jun 2019

Guest Student, IT University of Copenhagen — Denmark

GPA 12/12

Sep 2013 — Jun 2017

BEng in Mechanical Engineering, South China University of Technology — China

EXPERIENCE

Jul 2020 — Sep 2020

Data Scientist Internship, Architecture Quote — Copenhagen

Develop data engineering pipelines and train machine learning models to automate house price estimation.

Jun 2019 — Jul 2020

Research Assistant, University of Copenhagen — Copenhagen

Independently lead a research project on haptic interaction devices while also providing support for other group projects in in Human-Centric Computation.

Feb 2018 — Aug 2018

Deep Learning Algorithm Internship, Deep North — China

Supervise three interns in the algorithm department, concentrating on data engineering pipelines and documentation, and coordinate with the foreign annotation team. Additionally, test new deep learning models.

PROJECTS

May 2021 — Present

Robot-assisted perinatal depression diagnosis — [Multi-modal ML] [Human-robot interaction]

Investigate the feasibility and acceptability of robot-assisted diagnosis for perinatal depression by conducting Human-Robot-Interaction studies. Develop multi-modal deep learning models for automatic depression diagnosis.

Feb 2021 — Present

Mom2b: mobile big data for perinatal depression diagnosis — [Multi-modal ML]

Utilize machine learning techniques on longitudinal mobile data to predict the onset of perinatal depression.

Jul 2019 — Jun 2020

Air-table: noval interactive device — [HCI]

Design and construct a haptic interactive device from the ground up, integrating both hardware and software components, and conduct user studies with the prototype.

Feb 2019 — Jun 2019

Multi-modality Music Genre classification — [Multi-modal ML]

Applied Random Forest, SVM, Neural Networks, and deep learning techniques to classify music genres using features from three modalities: audio, images, and lyrics.

Feb 2019 — Jun 2019

Machine learning for authership attribution — [NLP]

Employed both classical machine learning methods and deep learning techniques, including BERT, for the task of authorship attribution.

PUBLICATIONS

[1] Bilal, A., Fransson, E., Bränn, E., Eriksson, A., **Zhong, M.**, Gidén, K., ... Papadopoulos, F. (2022). Predicting perinatal health outcomes using smartphone-based digital phenotyping and machine learning in a prospective Swedish cohort (Mom2B): Study protocol. *BMJ Open, 12*(4).

[2] **Zhong, M.**, van Zoest, V., Bilal, A. M., Papadopoulos, F. C., & Castellano, G. (2022). Unimodal vs. multimodal prediction of antenatal depression from smartphone-based survey data in a longitudinal study. *ICMI '22: Proceedings of the 2022 International Conference on Multimodal Interaction*, 455–467.

[3] **Zhong, M.**, Bilal, A. M., Papadopoulos, F. C., & Castellano, G. (2021). Psychiatrists' views on robot-assisted diagnostics of peripartum depression. *Social Robotics: 13th International Conference, ICSR 2021 Singapore, Singapore, November 10–13, 2021 Proceedings*, 464–474.

[4] Tanqueray, L., Paulsson, T., **Zhong, M.**, Larsson, S., & Castellano, G. (2022). Gender fairness in social robotics: Exploring a future care of peripartum depression. *Proceedings of the 2022 17th ACM/IEEE International Conference on Human-Robot Interaction (HRI '22)*, 598–607.

[5] Paulsson, T., **Zhong, M.**, García Velázquez, I., & Castellano, G. (2023). Exploring mothers' perspectives on socially assistive robots in peripartum depression screening. *HRI '23: Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction*, 486–490.

[6] **Zhong, M.**, Fraile, M., Castellano, G., & Winkle, K. (2023). A case study in designing trustworthy interactions: Implications for socially assistive robotics. *Frontiers in Computer Science, 5*.

[7] Kim, H., Everitt, A., Tejada, C., **Zhong, M.**, & Ashbrook, D. (2021). MorpheesPlug: A toolkit for prototyping shape-changing interfaces. *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI '21)*. Association for Computing Machinery, New York, NY, USA, Article 101, 1–13.

[8] Savage, V., Tejada, C., **Zhong, M.**, Ramakers, R., Ashbrook, D., & Kim, H. (2022). AirLogic: Embedding pneumatic computation and I/O in 3D models to fabricate electronics-free interactive objects. *Proceedings of the 35th Annual ACM Symposium on User Interface Software and Technology (UIST '22)*. Association for Computing Machinery, New York, NY, USA, Article 9, 1–12.

LANGUAGES

Mandarin	Native speaker	**Swedish**	Beginner
English	Work proficient		

HONORS & AWARDS

Sep 2018 — Jun 2020	Danish Government Scholarship	University of Copenhagen
Oct 2015	Scholarship for Outstanding Students and the "Merit Student"	South China University of Technology
May 2015	Third Prize in "Midea Cup" intelligent electrical kitchen utensils design competition	Guangzhou
Oct 2014	Scholarship for Outstanding Students and the "Merit Student"	South China University of Technology

SKILLS

Data Science	Node.js
Python	SQL
Machine Learning	React
Pytorch	C++
Linux	ROS
GitHub	Docker
JavaScript	