Xiaoxuan HEI

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EDUCATION

ENSTA, Institut Polytechnique de Paris Palaiseau, France
Ph.D. in Computer Science; Supervisor: Prof. Adriana Tapus *Oct. 2022 – Expected June 2026*

Université Paris-Saclay Orsay, France
Master in Computer Science (Data & Knowledge) *Sept. 2019 – Sept. 2020*

Polytech Paris-Saclay Orsay, France
Engineer in Computer Science *Sept. 2017 – Sept. 2020*

Huazhong University of Science and Technology Wuhan, China
Bachelor in Optoelectronic Information *Sept. 2014 – June 2018*

EXPERIENCE

Big Data Engineer Jan. 2021 – Aug. 2022
New Oriental Education & Technology Group *Beijing, China*

- Designed and implemented a buried point (event tracking) system for user behavior data collection.
- Built a Change Data Capture (CDC) pipeline to synchronize and process real-time data streams.
- Developed and maintained Data Warehouse services to support analytics and business intelligence.

Research Intern May 2020 – Sept. 2020
ENSTA, Institut Polytechnique de Paris *Palaiseau, France*

- Speech-Driven Robot Face Generation Project: Trained a deep generative model on paired speech audio and facial expression data to enable robots to generate facial expressions from input speech.

Interpreter Intern Aug. 2018 – Sept. 2018
8th Arrondissement Police Station *Paris, France*

- Provided Chinese–French interpretation, assisting Chinese speakers in filing police reports.

PUBLICATIONS

- **Hei, X.**, Zhang, H., and Tapus, A. (2025), "Investigating the Impact of Humor on Learning in Robot-Assisted Education", In 2025 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Hangzhou, China, October 2025

- Shangguan, Z., **Hei, X.**, Li, F., Yu, C., Song, S., Zhao, J., Cangelosi, A., and Tapus, A. (2025), "Learning from Human Conversations: A Seq2Seq based Multi-modal Robot Facial Expression Reaction Framework in HRI", In 2025 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Hangzhou, China, October 2025 (Best Paper Award Finalist)

- **Hei, X.**, Zhang, H. and Tapus, A. (2025) "Estimating User Engagement in Human Robot Interaction Using a Dynamic Bayesian Network", In 2025 IEEE International Conference on Robotics and Automation (ICRA), Atlanta, USA, May 2025

- Zhang, H., Saood, A., García Cárdenas, J.J., **Hei, X.**, and Tapus, A. (2025) ""Oh! It's Fun Chatting with You!" A Humor-aware Social Robot Chat Framework", In 2025 IEEE International Conference on Robotics and Automation (ICRA), Atlanta, USA, May 2025

- Garcia Cardenas, J.J., **Hei, X.**, and Tapus, A. (2024) "Exploring Cognitive Load Dynamics in Human-Machine Interaction for Teleoperation: A User-Centric Perspective on Remote Operation System Design", In 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Abu Dhabi, UAE, October 2024

- **Hei, X.**, Zhang, H., and Tapus, A. (2024) "Exploring Help-Seeking Behavior, Performance, and Cognitive Load in Individual Tutoring: A Comparative Study between Human Tutors and Social Robots", In 33rd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), Pasadena, California, USA, August 2024

- Zhang, H., **Hei, X.**, Zhong, J., Tapus, A. (2024) "Robot Laughter: Does an appropriate laugh facilitate the robot's humor performance?", In 33rd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), Pasadena, California, USA, August 2024

- Zhang, H., **Hei, X.**, García Cárdenas, J.J., Miao, X., Tapus, A. (2024) "Toward a Multi-dimensional Humor Dataset for Social Robots", In 33rd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), Pasadena, California, USA, August 2024

- **Hei, X.**, Zhang, H., Yu, C., and Tapus, A. (2024) "A bilingual social robot with sign language and natural language", In Companion of the 2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI), Boulder, Colorado, USA, March 2024

- Zhang, H., Yu, C., **Hei, X.**, and Tapus, A. (2024) "Semantic Gesture in Robot Humor: A New Dimension to Enhance the Humor Expression", In Companion of the 2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI), Boulder, Colorado, USA, March 2024

- **Hei, X.**, Denis, V., Oréfice, P.H., Afyouni, A., Laborde, P., Legois, D., Ocnarescu, I., Anastassova, M., Tapus, A. (2023) "Evaluating Students' Experiences in Hybrid Learning Environments: A Comparative Analysis of Kubi and Double Telepresence Robots", In International Conference of Social Robotics (ICSR), Doha, Qatar, December 2023

- **Hei, X.**, Zhang, H., and Tapus, A. (2023) "Robots in education: Influence of Regulatory Focus Theory", In 32nd IEEE International Conference on Robot and Human Interactive Communication (RO-MAN), Busan, South Korea, August 2023

- Yu, C., Zhang, H., Shangguan, Z., **Hei, X.**, Cangelosi, A., and Tapus, A. (2022) "Speech-driven Robot Face Action Generation with Deep Generative Model for Social Robots", In International Conference of Social Robotics (ICSR), Florence, Italy, December 2022 (Best Paper Award Finalist)

TEACHING EXPERIENCE

Teaching Assistant   *ENSTA, Institut Polytechnique de Paris*
- ROB 311: Learning for robotics (2022, 2023, 2025)
- IN 104: C language project (2023)

AWARDS

- IROS-SDC Travel Award for IROS 2025   October 2025
- IROS 2025 Social Media Ambassador of IEEE Robotics and Automation Society   October 2025
- RAS Travel Grant for ICRA 2025   May 2025
- Best Poster Award at Welcome Day of the Doctoral School IP Paris 2023-2024   December 2023
- Honor of Outstanding Graduates of HUST   June 2018
- Honor of Excellent Student of HUST   May 2017

PROFESSIONAL SERVICE

Reviewer for
- ACM/IEEE International Conference on Human-Robot Interaction (HRI) 2024
- IEEE International Conference on Robotics and Automation (ICRA) 2024, 2025, 2026
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2024, 2025
- IEEE International Conference on Robot and Human Interactive Communication (RO-MAN) 2024, 2025
- IEEE International Conference on Development and Learning (ICDL) 2025
- International Conference of Social Robotics (ICSR) 2025
- Towards Autonomous Robotic Systems Conference (TAROS) 2025
- Advanced Robotics Journal 2024

Organization
- IROS 2025 Workshop "Enhancing Human Engagement in Social Assistive Robotics: Exploring Interaction, Cognitive Load, and Adaptive Support"
- ICSR 2025 Workshop "Cognitive Load and Engagement in Human-Robot Collaboration: From Robots in Hazardous Environments to Educational Applications"

PROFESSIONAL SKILLS

- Languages: Chinese - native; English - fluent; French - fluent; Korean - intermediate
- Programming Languages: Python, JAVA, C/C++
- Operating Systems: Linux (Ubuntu), MacOS, ROS (Robot Operating System)