

# Xiaoxuan HEI

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## EDUCATION

### ENSTA, Institut Polytechnique de Paris

*Ph.D. in Computer Science; Supervisor: Prof. Adriana Tapus*

Palaiseau, France

Oct. 2022 – Expected June 2026

### Université Paris-Saclay

*Master in Computer Science (Data & Knowledge)*

Orsay, France

Sept. 2019 – Sept. 2020

### Polytech Paris-Saclay

*Engineer in Computer Science*

Orsay, France

Sept. 2017 – Sept. 2020

### Huazhong University of Science and Technology

*Bachelor in Optoelectronic Information*

Wuhan, China

Sept. 2014 – June 2018

## EXPERIENCE

### Big Data Engineer

*New Oriental Education & Technology Group*

Jan. 2021 – Aug. 2022

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

*ENSTA, Institut Polytechnique de Paris*

May 2020 – Sept. 2020

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

*8th Arrondissement Police Station*

Aug. 2018 – Sept. 2018

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., Xin 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., Oréface, P.H., Afyouni, A., Laborde, P., Legois, D., Ocnareescu, 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

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### *Teaching Assistant*

*ENSTA, Institut Polytechnique de Paris*

- ROB 311: Learning for robotics (2022, 2023, 2025)
- IN 104: C language project (2023)

## AWARDS

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| • 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

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### *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

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