WENJIE YIN (印文杰)

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*With hands-on experience applying the techniques of **deep learning** and **robotics** in human-robot analysis and in multi-modal motion analysis, I am passionate about further integrating the advances of artificial intelligence technologies into real-world applications, such as autonomous systems and multimedia platforms.*

EDUCATION

KTH Royal Institute of Technology, Stockholm, Sweden   Mar 2024 - Present
Postdoc Fellow in Division of Robotics, Perception and Learning (RPL)
Advisor: Prof. Danica Kragic

KTH Royal Institute of Technology, Stockholm, Sweden   Jun 2019 – Mar 2024
Ph.D. in Division of Robotics, Perception and Learning (RPL)
Supervisors: Prof. Mårten Björkman and Prof. Danica Kragic

National Institute of Informatics (NII), Tokyo, Japan   Mar 2023 –Aug 2023
Visiting Researcher in Digital Content and Media Sciences Research Division
Advisor: Prof. Yi Yu

KTH Royal Institute of Technology, Stockholm, Sweden   Aug 2017 – Jul 2019
M.S. in Systems, control and robotics (3+2); Track: Robotics and Autonomous System   *GPA: 4.82/5.00*
Honored with Scholarship (1%); Supervisor: Prof. Atsuto Maki

Zhejiang University, Hangzhou, China   Sep 2014 – Jul 2018
B.E. in Automation, Control Science and Engineering College   *GPA: 3.90/4.00*
Outstanding Graduate of Zhejiang University (Top 10%); Supervisor: Prof. Wei Jiang

RESEARCH INTEREST

- **Human Motion Analysis** (Motion understanding, Dance style transfer, Dance choreography)
- **Human Agent Interaction** (Human-human/robot interaction, group behaviors, Multimedia)
- **Deep Learning** (Generative models, Graph neural networks, Foundation Models)

PUBLICATIONS

Human Motion Analysis

1. **Yin, W.,** Yu, Y., Yin, H., Kragic, D., Björkman, M., (2024). Scalable Motion Style Transfer with Constrained Diffusion Generation. *Accepted at the 38th Annual AAAI Conference on Artificial Intelligence (**AAAI**).*

2. Fu, J., Tan, J., **Yin, W.,** Pashami, S., Björkman, M., Component Attention Network for Multimodal Dance Improvisation Recognition., (2023). *Accepted at 25th ACM International Conference on Multimodal Interaction (**ICMI**)*

3. **Yin, W.,** Tu, R., Yin, H., Kragic, D., Kjellström, H., Björkman, M., (2023). Controllable Motion Synthesis and Reconstruction with Autoregressive Diffusion Models. *Accepted at the 32th IEEE International Conference on Robot & Human Interactive Communication (**RO-MAN**).* IEEE.

4. **Yin, W.,** Yin, H., Baraka, K., Kragic, D., Björkman, M., (2023). Multimodal Dance Style Transfer. *Accepted at the Journal of Machine Vision and Applications (**MVAP**), 2023.*

5. **Yin, W.,** Yin, H., Baraka, K., Kragic, D., Björkman, M., (2023). Dance Style Transfer with Cross-modal Trasformer. *Accepted at the Winter Conference on Application of Computer Vision (**WACV**).*

6. **Yin, W.**, Yin, H., Kragic, D., Björkman, M., (2021). Graph-based Normalizing Flow for Human Motion Generation and Reconstruction. *Accepted at the 30th IEEE International Conference on Robot & Human Interactive Communication (RO-MAN)*. IEEE.

7. **Yin**, W., Yin, H., Kragic, D., Björkman, M., Long-term Human Motion Generation and Reconstruction Using Graph-based Normalizing Flow. *Accepted at the 3rd Workshop on Long-term Human Motion Prediction (LHMP) - IEEE International Conference on Robotics and Automation (ICRA)*.

8. Yang, F.*, **Yin, W.***, Inamura, T., Björkman, M., Peters, C., (2020). Group behavior recognition using attention-and graph-based neural networks. *Accepted at the 24th European Conference on Artificial Intelligence (ECAI)*. (*: Co-first author)

9. **Yin, W.**, Zhao, X., Yu, Y., Yin, H., Kragic, D., Björkman, M., (2023). LM2D: Lyric- and Music-driven Dance Generation. *(Under Review, IJCAI)*.

Human Agent Interaction

10. Demir, S.U., **Yin, W.**, Ghadirzadeh, A., Güneysu, A., Björkman, M., Kragic, D. (2022). Improving EEG-based Motor Execution Classification for Robot Control. *Accepted at the 24th International Conference on Human-Computer Interaction (HCII)*.

11. Ghadirzadeh, A., Chen, X., **Yin, W.**, Yi, Z., Björkman, M., Kragic, D., (2020). Human-centered collaborative robots with deep reinforcement learning. *IEEE Robotics and Automation Letters (RAL)*.

12. Yang, F.*, **Yin, W.***, Björkman, M., Peters, C., (2020). Impact of trajectory generation methods on viewer perception of robot approaching group behaviors. *Accepted at the 29th IEEE International Conference on Robot and Human Interactive Communication (RO-MAN)*. IEEE. (*: Co-first author)

13. Luo, J., Chun, O., Nie, X., **Yin, W.**, Lu, H., Guo, Y., (2019). Accurate targeting in robot-assisted TCM pulse diagnosis using adaptive sensor fusion. *Periodicals of Engineering and Natural Sciences*.

Other Topics

14. Yang, F., **Yin, W.**, Wang, L., Li, T., Zhao, P., Liu, B, Wang, P., Qiao, B., Liu, Y., Björkman, M., Rajmohan, S., Lin, Q., Zhang, D. Diffusion-based Time Series Imputation for Microsoft 365. *The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE) Industry Track 2023*.

15. Shi, J.*, **Yin, W.***, Du, Y*., Folkesson, J., (2019). Automated Underwater Pipeline Damage Detection using Neural Nets. *Accepted at ICRA 2019 Workshop on Underwater Robotics Perception*. (*: Co-first author)

16. Zhou, S., **Yin, W.**, Björkman, M., Silva, A., Blázquez, C., (2023). SmartTBD: Smart Tracking for Resource-constrained Object Detection. *(Under Review, TECS)*.

17. Zhao, X., Lee, C., **Yin, W.**, Kragic, D., (2023). ChatGPT – A new type of friend? *(Under Review, Science Robotics)*.

EXPERIENCE AND EMPLOYMENT

- Nov 2021 – Feb 2023, *AI/CV Consultant*, **Carieco AB** (an elderly care robot start-up)
- Nov 2022 – Jan 2023, *Visiting Fellow* at **Microsoft Research Asia Lab**, Data, Knowledge and Intelligence Group
- Jan 2019 – Jun 2019, *Thesis founded by* **Scania**, Autonomous Vehicles Group
- Jun 2018 – Sep 2018, *Research Engineer* at **Fudan University**, Intelligent Robot Research Institute
- Jun 2017 – Aug 2017, *Development Engineer Intern* at **Seer Robotics**

PROJECTS

- D2Smell (Digitizing Smell), <u>ERC Synergy Grant</u>, from natural statistics of olfactory perceptual space to digital transmission of odors.   Mar 2024 - Present

- EnTimeMent (ENtrainment & synchronization at multiple TIME scales in the MENTal foundations of expressive gestures), supported by EU Horizon 2020 FET PROACTIVE project.   Jun 2019 – Feb 2023
- Cloud Failure Prediction for Microsoft 365, in Microsoft Research Asia Lab.   Nov 2022 – Feb 2023
- Brain-Computer Interfaces (BCI) project, supported by the ERC (European Research Council)   Jun 2021 – Dec 2022
- Underwater Robot, supported by SSF through the Swedish Maritime Robotics Centre (SMaRC), support by MMT Sweden AB and Gassco Norway for providing data.   Mar 2018 – Aug 2018
- Autonomous interactive TCM physical examination robot, supported by National Natural Science Foundation of China (No. 61876015)   Jun 2018 – Jan 2019

TEACHING

- DD2421: Machine Learning, KTH   Fall 2019 – Autumn 2023
- DD2423: Image Analysis and Computer Vision, KTH   Fall 2018 – Autumn 2023
- Java Programming, ZJU   Fall 2016

SUPERVISION

- Dominykas Jogela, Group Dance Generation with Generative Models, KTH   Nov 2023 - Present
- Qingyuan Yao, Lyric- and Music-driven Dance Generation, NII   Mar 2023 – Aug 2023
- Shihang Zhou, Distributed Object Detection and Tracking, KTH   Sep 2022 – Jun 2023
- Yang Gao, Long-Term Pose-Based Trajectory Prediction for Pedestrians, KTH   Dec 2021 – Dec 2023
- Jia Fu, Multimodal Machine Learning in Human Motion Analysis, KTH   Sep 2021 – Sep 2022

  (Four supervised students successfully obtained master's degrees, and two obtained PhD positions)

ACADEMIC SERVICE

- Program Committee (PC) Member for the first Multimodal Representation Learning Workshop at ICLR
- Reviewer for the IEEE International Conference on Robotics and Automation (ICRA)
- Reviewer for the IEEE Transactions on Multimedia
- Reviewer for the ACM Multimedia (ACM-MM)
- Reviewer for the International Journal of Human-Computer Interaction (IJHCI)
- Reviewer for the Imaging Science Journal
- Reviewer for the IEEE Robotics and Automation Letters (RA-L)

HONORS (SELECTED)

- Winter Conference on Applications of Computer Vision (WACV) Award Finalists   2023
- Scholarship of KTH awarded to students at Top 1%   2018
- Continuously three years awarded with Scholarship at Zhejiang University (Top 10%)   2015, 2016, 2017
- American College Students Mathematical Contest (MCM/ICM) (Honorable Mention)   2017
- The Supcon Scholarship for outstanding students at Zhejiang University (Top 10%)   2017
- The Supcon Process Engineering Competition (Successful-Competition)   2017
- The Phoenix Scholarship for outstanding students at Zhejiang University (Top 10%)   2016
- The Supcon Robotics Competition (Third-Class Prize Winner)   2016