Hang Yin

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Professional Experience

2022– **Department of Computer Science, University of Copenhagen**.
Tenure-Track Assistant Professor in Robotics

2018–2022 **Centre for Autonomous Systems, KTH Royal Institute of Technology**.
PostDoctoral Researcher

2012–2018 **Laboratory of Learning Algorithm and Systems, EPFL; Group on AI for People and the Society, IST, University of Lisbon and INESC-ID**.
Doctoral Assistant

2010–2012 **SIEMENS Industry Software Ltd., Shanghai**.
Software Engineer

Education

2012–2018 **PhD with Distinction, Swiss Federal Institute of Technology Lausanne (EPFL) and Instituto Superior Técnico (IST), University of Lisbon**.
Thesis: Incorporating Human Expertise in Robot Motion Learning and Synthesis
Supervisors: Prof. Aude Billard, Prof. Ana Paiva and Prof. Francisco S. Melo

2007–2010 **Master in Mechatronics, Shanghai Jiao Tong University**.
Thesis: Locomotion of LOCH Humanoid: Dynamical Simulation, Gait Planning and Interactive Operation

2003–2007 **Bachelors in Mechanical Engineering and in Computer Engineering (Minor), Shanghai Jiao Tong University**.

Academic Activities

2022-2022 Session chair of IROS 2022.

2022-2022 Organizer of IROS The 2nd Workshop RL-CONFORM: Reinforcement Learning meets HRI, Control, and Formal Methods.

2022-2022 Organizer of ICRA The 2nd Workshop on Representing and Manipulating Deformable Objects.

2021- Associate editor of ICRA 2022, 2023.

2021-2021 Organizer of IROS Workshop RL-CONFORM: Reinforcement Learning meets HRI, Control, and Formal Methods.

2020-2021 Organizer of ICRA Workshop on Representing and Manipulating Deformable Objects.

2018-2019 Organizer of RSS Pioneers.

2015- Reviewer for conferences and journals: IROS, ICRA, HUMANOIDS, RSS, ISRR, CoRL, L4DC, AAAI, HRI, ROMAN, ICSR, AI-HRI, ECML, WACV, Science Robotics, IEEE Transactions on Robotics, Autonomous Robots, IEEE Robotics and Automation Letters, IEEE Robotics & Automation Magazine, IEEE Transactions on Systems, Man, and Cybernetics, IEEE Transactions on Mechatronics and International Journal of Social Robotics.

Teaching and Supervision

2018- Co-supervising PhD students at KTH: Silvia Cruciani, Michael C. Welle, Shahbaz Khader, Zehang Weng, Alfredo Rechlin.

2020-2020 Master thesis "Skill Imitation Learning on Dual-Arm Robotic Systems", Jonathan Österberg, KTH.

2020-2020	Master thesis "Feature-level Sequential Recommendation with Bidirectional Encoder Representations from Transformer", Lingxi Xiong, KTH.
2020-	Designing and cotutoring course DD3359 Reinforcement Learning, KTH.
2019-2021	Cotutoring DD2430 Project Course in Data Science, KTH.
2013-2014	Semester project - "Physical Human-Robot Interaction without Force Sensor", EPFL.

Talks

Oct 2022	Oral presentations at IROS, Kyoto, Japan.
Oct 2022	Invited talk at Intelligent Robotic Manipulation Lab, Tsinghua University.
May 2022	Invited talk at ICRA Workshop on Compliant Manipulation, Philadelphia, USA.
Apr 2022	Invited talk at Google Developer Student Club, ETH Zurich.
Sep 2020	Invited talk at Talking Robotics, University of Washington and IST, University of Lisbon.
Dec 2017	Invited talk at Wuhan University and Cobot Corp., China.
Feb 2017	Oral presentation at AAAI, San Francisco, USA.
July 2016	Oral presentation at IJCAI, New York, USA.
Nov 2014	Oral presentation at Humanoids, Madrid, Spain.

Awards and Grants

2021	Research grant from Swedish Promobilia foundation (200, 000 SEK)
2020	EU H2020 Project CANOPIES (Team Member)
2018	Best PhD Thesis Nomination in the Doctoral Program of Robotics Control and Intelligent Systems (EDRS), EPFL
2018	Travel grant for RSS Pioneers
2015	Travel grant for HRI Pioneers
2012	IST-EPFL Joint Doctoral Initiative Fellowship
2010	Excellent Master Thesis Award of Shanghai Jiao Tong University
2003-2007	Excellent Academic Scholarships and Student Award of Shanghai Jiao Tong University

Publications

Google Scholar link: https://scholar.google.com/citations?hl=en&user=7VW7URUAAAAJ

Journals (* indicates authors contributed equally)

[j8] M. Lippi*, P. Poklukar*, M. C. Welle*, A. Varava, **H. Yin**, A. Marino, D. Kragic, *Enabling Visual Action Planning for Object Manipulation through Latent Space Roadmap*, IEEE Transactions on Robotics, 2022

[j7] M. Vasco, **H. Yin**, F. S. Melo, A. Paiva *Leveraging Hierarchy in Multimodal Generative Models for Effective Cross-Modality Inference* , Neural Networks, 2021

[j6] S. Khader, **H. Yin**, P. Falco, D. Kragic, *Learning Deep Energy Shaping Policies for Stability-Guaranteed Manipulation* , IEEE Robotics and Automation Letters, 2021

[j5] **H. Yin**, A. Varava, D. Kragic, *Modeling, Learning, Perception, and Control Methods for Deformable Object Manipulation*, Science Robotics, 2021

[j4] S. Khader, **H. Yin**, P. Falco, D. Kragic, *Stability-guaranteed Reinforcement Learning for Contact-rich Manipulation* , IEEE Robotics and Automation Letters, 2020

[j3] S. Khader, **H. Yin**, P. Falco, D. Kragic, *Data-Efficient Model Learning and Prediction for Contact-Rich Manipulation Tasks*, IEEE Robotics and Automation Letters, 2020

[j2] I. Garcia-Camacho*, M. Lippi*, M. C. Welle, **H. Yin**, R. Antonova, A. Varava, J. Borras, C. Torras, A. Marino, G. Alenyà, D. Kragic, *Benchmarking bimanual cloth manipulation*, IEEE Robotics and Automation Letters, 2020

[j1] **H. Yin**, F. Melo, A. Paiva and A. Billard, *An Ensemble Inverse Optimal Control Approach for Robotic Task Learning and Adaptation*, Autonomous Robots, 2019

Conference Proceedings (* indicates authors contributed equally)

[c20] W. Yin, **H. Yin**, K. Baraka, D. Kragic, M. Björkman, *Dance Style Transfer with Cross-modal Transformer* , In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision (WACV), 2023

[c19] A. Rechlin, G. L. Marchetti, **H. Yin**, A. Ghadirzadeh, D. Kragic, *Back to the Manifold: Recovering from Out-of-Distribution States* , In Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022

[c18] **H. Yin**, C. K. Verginis, D. Kragic, *Consensus-based Normalizing-Flow Control: A Case Study in Learning Dual-Arm Coordination* , In Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022

[c17] **H. Yin**, M. C. Welle, D. Kragic, *Embedding Koopman Optimal Control in Robot Policy Learning* , In Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2022

[c16] P. Poklukar*, M. Vasco*, **H. Yin**, F. S. Melo, A. Paiva, D. Kragic, *Geometric Multimodal Contrastive Representation Learning* , In Proceedings of the International Conference on Machine Learning (ICML), 2022

[c15] M. Vasco, **H. Yin**, F. S. Melo, A. Paiva, *How to Sense the World: Leveraging Hierarchy in Multimodal Perception for Robust Reinforcement Learning Agents* , In Proceedings of the International Conference on Autonomous Agents and MultiAgent Systems (AAMAS), 2022

[c14] R. Antonova*, P. Shi*, **H. Yin**, Z. Weng, D. Kragic, *Dynamic Environments with Deformable Objects* , In Proceedings of Neural Information Processing Systems (NeurIPS) Track on Datasets and Benchmarks, 2021

[c13] Z. Weng*, F. Paus*, A. Varava, **H. Yin**, T. Asfour, D. Kragic, *Graph-based Task-specific Prediction Models for Interactions between Deformable and Rigid Objects* , In Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2021

[c12] W. Yin, **H. Yin**, D. Kragic, M. Björkman, *Graph-based Normalizing Flow for Human Motion Generation and Reconstruction* , In Proceedings of the IEEE International Conference on Robot and Human Interactive Communication (ROMAN), 2021

[c11] S. Khader*, **H. Yin***, P. Falco, D. Kragic, *Learning Stable Normalizing-flow Control for Robotic Manipulation* , In Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), 2021

[c10] M. Lippi*, P. Poklukar*, M. C. Welle*, A. Varava, **H. Yin**, A. Marino, D. Kragic, *Latent Space Roadmap for Visual Action Planning of Deformable and Rigid Object Manipulation*, In Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020

[c9] S. Cruciani, **H. Yin**, D. Kragic, *In-Hand Manipulation of Objects with Unknown Shapes*, In Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), 2020

[c8] **H. Yin**, F. Melo, A. Billard and A. Paiva, *Boosting Robot Learning and Control with Domain Constraints*, Robotics: Science and Systems (RSS), RSS Pioneers, 2018

[c7] S. Chandra, R. Paradeda, **H. Yin**, P. Dillenbourg, R. Prada and A. Paiva, *Do Children Perceive Whether a Robotic Peer is Learning or Not*, In Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2018

[c6] S. Chandra, R. Paradeda, **H. Yin**, P. Dillenbourg, R. Prada and A. Paiva, *Affect of robot's competencies on children's perception*, In Proceedings of the International Conference on Autonomous Agents and MultiAgent Systems (AAMAS), 2017

[c5] **H. Yin**, F. Melo, A. Billard and A. Paiva, *Associate Latent Encodings in Learning from Demonstrations*, In Proceedings of The Thirty-First AAAI Conference on Artificial Intelligence (AAAI), 2017

[c4] **H. Yin**, P. Alves-Oliveira, F. Melo, A. Billard and A. Paiva, *Synthesizing Robotic Handwriting Motion by Learning from Human Demonstrations*, In Proceedings of International Joint Conference on Artificial Intelligence (IJCAI), 2016

[c3] **H. Yin**, A. Billard and A. Paiva, *Bidirectional Learning of Handwriting Skill in Human Robot Interaction*, In Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI), HRI Pioneers, 2015

[c2] **H. Yin**, A. Paiva and A. Billard, *Learning Cost Function and Trajectory for Robotic Writing Motion*, In Proceedings of the IEEE-RAS International Conference on Humanoid Robots (HUMANOIDS), 2014

[c1] M. Li, **H. Yin**, K. Tahara and A. Billard, *Learning Object-level Impedance Control for Robust Grasping and Dexterous Manipulation*, In Proceedings of the IEEE International Conference on Robotics and Automation (ICRA), 2014