

Yanning DAI

PhD Student, King Abdullah University of Science and Technology (KAUST)

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EDUCATION

Ph.D. in Computer Science King Abdullah University of Science and Technology (KAUST), Saudi Arabia Advisor: Prof. Jürgen Schmidhuber	<i>Jun 2024 – Present</i> GPA: 3.9/4.0
M.S in Electrical Engineering Beihang University, China Advisor: Prof. Shuo Gao	<i>Sep 2020 - Jul 2023</i> GPA: 3.8/4.0
B.E. in Electrical Engineering Beihang University, China	<i>Sep 2016 - Jul 2020</i> GPA: 3.8/4.0

RESEARCH INTERESTS

Reinforcement Learning, LLM Reasoning, Robotic Learning, Digital Human

SELECTED PUBLICATIONS

- [1] **Yanning Dai***, Yuhui Wang*, Dylan R Ashley, and Jürgen Schmidhuber. Efficient Morphology–Control Co-Design via Stackelberg Proximal Policy Optimization. In *The Fourteenth International Conference on Learning Representations (ICLR)*, 2026.
- [2] **Yanning Dai**, Chenyu Tang, Ruizhi Zhang, Wenyu Yang, Yilan Zhang, Yuhui Wang, Junliang Chen, Xuhang Chen, Ruimou Xie, Yangyue Cao, et al. Wearable-Informed Generative Digital Avatars Predict Task-Conditioned Post-Stroke Locomotion. *arXiv:2512.14329*, 2026.
- [3] Mohannad Alhakami, Dylan R Ashley, Joel Dunham, **Yanning Dai**, Francesco Faccio, Eric Feron, and Jürgen Schmidhuber. Towards an Extremely Robust Baby Robot With Rich Interaction Ability for Advanced Machine Learning Algorithms. In *2025 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 16725–16730. IEEE, 2025.
- [4] Shuo Gao, **Yanning Dai**, and Arokia Nathan. Tactile and Vision Perception for Intelligent Humanoids. *Advanced Intelligent Systems*, 4(2):2100074, 2022. **(Cover Article)**.
- [5] **Yanning Dai**, Jiaqi Wang, and Shuo Gao. Advanced Electronics and Artificial Intelligence: Must-have Technologies toward Human Body Digital Twins. *Advanced Intelligent Systems*, 4(7):2100263, 2022.
- [6] Shuo Gao, Junliang Chen, **Yanning Dai**, and Boyi Hu. *Wearable Systems based Gait Monitoring and Analysis*. Springer-Nature Press, ISBN: 9783030973315, 2022. **[Book]**.
- [7] Jun-Liang Chen*, **Yanning Dai***, Nicolas S Grimaldi, JingJing Lin, BoYi Hu, YinFeng Wu, and Shuo Gao. Plantar Pressure-based Insole Gait Monitoring Techniques for Diseases Monitoring and Analysis: A Review. *Advanced Materials Technologies*, 7(1):2100566, 2022.
- [8] **Yanning Dai** and Shuo Gao. A Flexible Multi-Functional Smart Skin for Force, Touch Position, Proximity, and Humidity Sensing for Humanoid Robots. *IEEE Sensors Journal*, 21(23):26355–26363, 2021.
- [9] Shuo Gao, **Yanning Dai**, Junliang Chen, Anbiao Huang, and Yong Liu. 7.1: Invited Paper: Force Touch and Machine Learning Based Smart Sensing Techniques for Interactive Displays. In *SID Symposium Digest of Technical Papers*, volume 52, pages 40–43. Wiley Online Library, 2021.

- [10] **Yanning Dai**, Junliang Chen, Wenbin Tian, Lijun Xu, and Shuo Gao. A PVDF/Au/PEN Multifunctional Flexible Human-Machine Interface for Multidimensional Sensing and Energy Harvesting for the Internet of Things. *IEEE Sensors Journal*, 20(14):7556–7568, 2020.
- [11] **Yanning Dai** and Shuo Gao. Multi-Functional Smart Skin for Multi-Dimensional Perception for Humanoid Robots. In *2020 IEEE International Conference on Flexible and Printable Sensors and Systems (FLEPS)*. IEEE, 2020.
- [12] **Yanning Dai** and Shuo Gao. A PVDF/Au/PEN Multifunctional Flexible Human-Machine Interface for 2D Position, Force, Hover, Surface Curvature Sensing and Energy Harvesting. In *2019 IEEE International Conference on Flexible and Printable Sensors and Systems (FLEPS)*. IEEE, 2019.

EXPERIENCE

Research Intern

Jan 2024– May 2024

Beijing Tsinghua Changung Hospital, Tsinghua University

Built data-driven world models for patient-specific recovery dynamics on large-scale clinical datasets.

Research Assistant

Jun 2023– Jan 2024

Advanced Sensing and Intelligent Systems Lab, Beihang University

Developed reinforcement learning and generative models for personalized digital human systems and behavior generation in stroke rehabilitation.

Research Intern

Jun 2022– Jun 2023

National Engineering Research Center for Ophthalmic Diagnosis

Modeled patient-specific temporal dynamics of myopia progression from longitudinal ophthalmic data.

SELECTED HONORS

1. Rising Stars in AI, KASUT AI Initiative (30 Awardees Worldwide) *Apr 2024*
2. National Scholarship, Ministry of Education of China (Top 5%) *Dec 2022*
3. The 3rd Class Award of Science and Technology, China Instrument and Meter Society (National S&T Award, Rank: 2/6) *Oct 2022*
4. China Instrument and Control Society Scholarship, 1st Class Award, China Instrument and Meter Society (Top Society Award, Top 1%) *Nov 2019*

SKILLS

Programming: Python, C++, C, C#, HTML, Shell, Matlab

Project / Lib Experiences: PyTorch, TensorFlow, Transformers, Distributed Training (FSDP), Accelerated Inference (SGLang, vLLM), ROS, Robot Simulation (MuJoCo, Gazebo, Unity), Unitree SDK

Languages: English (Fluent), Mandarin (Native)

TEACHING

School of Instrumentation and Optoelectronic Engineering, Beihang University:

Teaching Assistant, IntelliSense and Autonomous Systems

Spring 2023

Teaching Assistant, Introduction to Smart Sensing Systems

Fall 2022

SERVICES

Reviewer for *Frontiers in Electronics* (2021 - Now), *IEEE Sensors Journal* (2020 - Now), and *IEEE FLEPS Conference* (2020, 201)