






# Ningquan Gu

PhD student    gu.ningquan.t1@dc.tohoku.ac.jp  
 <https://guningquan.github.io/>



## Education

 Tohoku University	Robotics (Neuro-Robotics Lab)	Ph.D.	10/2024 – Current
 Wuhan Textile University	Software Engineering	M.Eng.	09/2021 – 07/2024
 Wuhan University of Technology	Industrial Design	B.Eng.	09/2007 – 07/2011

## Research Interests

Embodied AI, robotic manipulation, multimodal learning, deformable object manipulation, LLMs in robotics, and industrial applications of robotics.

## Working Experience

 **GEELY SANY**   Engineer / Assistant Manager / Project Supervisor   07/2011 – 09/2021

## Publications

1. N. Gu, K. Kosuge and M. Hayashibe, “TactileAloha: Learning Bimanual Manipulation With Tactile Sensing,” in **IEEE Robotics and Automation Letters**, vol. 10, no. 8, pp. 8348-8355, Aug. 2025. (JCR Q1)
2. N. Gu, R. He and L. Yu, “Learning to Unfold Garment Effectively Into Oriented Direction,” in **IEEE Robotics and Automation Letters**, vol. 9, no. 2, pp. 1051-1058, Feb. 2024. (JCR Q1)
3. N. Gu, Z. Zhang, R. He, and L. Yu, “ShakingBot: dynamic manipulation for bagging,” **Robotica**, vol. 42, no. 3, pp. 775–791, 2024. (Cover Article, JCR Q3).

## Under Review

1. N. Gu, Y. Li, K. Kosuge and M. Hayashibe, “Hierarchical LLM-Guided Multi-Task Manipulation with Multimodal Learning and Action-Mask Policy,” under review at the **International Conference on Learning Representations (ICLR 2026)**.
2. N. Gu, K. Kosuge and M. Hayashibe, “SonicAloha: Learning Auditory-Enhanced Bimanual Manipulation with Audio-Visual Transformer,” under review at the **IEEE Transactions on Industrial Informatics**.

## Patents

1. N. Gu, R. He, “A dual-arm humanoid intelligent folding robot,” Chinese Invention Patent, Patent No. ZL 2023 1 0557628.0, authorized on Jan. 5, 2024.
2. N. Gu, R. He, “Ultraviolet-based high-precision keypoint detection method and application for textiles,” Chinese Invention Patent, Patent No. ZL 2023 1 0617337.6, authorized on Jul. 22, 2025.

## Competition Achievements

1. China Robotics and Artificial Intelligence Competition (organized by the Chinese Association for Artificial Intelligence), Humanoid Robot Sprint Project, First Prize, 2022/08.
2. China Robotics and Artificial Intelligence Competition (organized by the Chinese Association for Artificial Intelligence), Humanoid Robot Penalty Kick Project, First Prize, 2022/08.

## Skills

- **Algorithms & AI:** Deep learning; reinforcement learning; imitation learning; LLMs.
- **Multimodal & Engineering:** Vision, audio, tactile, text modalities; robotic system design and building.
- **Programming:** Python, PyTorch, Linux, and Robot Operating System (ROS).