

Qingyao Tian

Phone: 18830252192 | Email: tqy00288@gmail.com

EDUCATION

Institute of Automation, Chinese Academy of Sciences | Ph.D. candidate

- State Key Laboratory of Multimodal Artificial Intelligence Systems • Automation 2021.9-2026.6

North China Electric Power University | B.E.

- School of Control and Computer Engineering • Automation 2017.9-2021.6

PUBLICATIONS

- [1] **Efficient Foundation Model on Endoscopic Videos | MICCAI 2025, Oral [First Author]**
Proposed *EndoMamba*, a backbone model for fast inference, and a data-efficient hierarchical pretraining method to build a medical video foundation model, with superior performance over existing methods.
- [2] **Landmark Detection and Tracking in Bronchoscopy | Transactions on Medical Imaging [First Author]**
Proposed *BronchoTrack*, a method for real-time detection, tracking, and localization of bronchoscopic branch landmarks. Validated effectiveness on offline clinical data and online animal experiments.
- [3] **Real-Time Bronchoscopic Visual Navigation Framework | IROS 2024 Oral, [First Author]**
Proposed a fast and accurate bronchoscopic localization method that fuses traditional depth registration with learning-based motion estimation.
- [4] **Probabilistic System for Robust Real-Time Bronchoscopic Localization | MICCAI 2024 [First Author]**
Proposed a Monte Carlo-based probabilistic localization framework, integrating depth estimation, motion estimation, and landmark detection to achieve interpretable, robust, and efficient bronchoscopic localization.
- [5] **Endoscopic Depth Estimation Foundation Model | MedIA, Under Review [First Author]**
Developed *EndoOmni*, a zero-shot depth estimation foundation model for endoscopy, using a label noise-robust pretraining method on large-scale data, outperforming existing models across multiple datasets.
- [6] **BREATH-VL: Vision-Language-Guided 6-DoF Bronchoscopy Localization | [First Author]**
Builds a hybrid localization pipeline that turns airway anatomy and motion history into language prompts for reasoning, then combines those semantic cues with feature registration for 6-DoF pose estimation.
- [7] **Harnessing Foundation Models for Bronchoscopy Localization | MICCAI CREATE [First Author]**
Presented a robust and generalizable framework for 6-DOF bronchoscopy localization with foundation models to improve generalization and robustness. Results demonstrate potential for clinical adoption.

RESEARCH EXPERIENCES

CARES Copilot | Centre for AI and Robotics, HK | Research Assistant

2023.6 – 2025.9

- Applied SFT using LoRA on large models for medical scenarios, improving accuracy and clinical relevance;
- Contributed to the development of downstream functions for the CARES Copilot surgical large model, including preoperative reconstruction, intraoperative localization and navigation, and procedural guidance.

Vision Navigation for Interventional Surgeries | CASIA | Research Assistant

2021.9 – 2026.6

- Curated large-scale open-source datasets and collaborate with hospitals to build private datasets to develop vision foundation models and pretraining methods for endoscopic image and video analysis;
- Designed a bronchoscopy navigation VLM by integrating open-source vision-language models with domain-specific knowledge to enable semantic understanding of complex scenarios and generate decisions.

HONORS

- Outstanding Student (top 10%), National Scholarship (top 3%), Outstanding Graduate
- National College Student English Competition – Grand Prize
- National College Student Intelligent Vehicle Competition (North China Region) – First Prize