Yiming Bao

Third-year Undergraduate
Department of Computer Science and Technology, Tsinghua University
Phone No.: +86-19805420316
E-mail: bao-ym23@mails.tsinghua.edu.cn

X / Twitter
GitHub
Homepage

EDUCATION

- **Undergraduate**
  Department of Computer Science and Technology, Tsinghua University — 2023 - Present
  GPA: 3.8/4.0 — Beijing, China

- **Relevant Courses**
  Embodied AI/Robotics: Embodied Artificial Intelligence (*), Intelligent system and Robotics (*)
  ML/AI: Introduction to Artificial Intelligence , Artificial Neural Network (A), CS285: Deep Reinforcement Learning(*), 6.S184: Generative AI with Stochastic Differential Equations(*), CS231N: Deep Learning for Computer Vision(*)
  Math/Systems: Probability and Statistics (A-), Linear Algebra (A), Calculus (A), High Performance Computing (A), Software Engineering (A)
  (*) denotes audited or online courses.

PUBLICATIONS & PREPRINTS

- **UniDex: A Robot Foundation Suite for Universal Dexterous Hand Control from Egocentric Human Videos**
  IN SUBMISSION — June 2025 - November 2025
  The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2026
  ANONYMOUS AUTHOR

RESEARCH

- **Research Interest**
  Embodied AI and robotics, with a focus on **bimanual dexterous manipulation** and **Leveraging human demonstrations** to address data scarcity and improve robot learning for manipulation.

- **Experience**
  - **DexGen: One Human Video is all you need** — November 2025 - Present
    * Built a **3D trajectory reconstruction pipeline** using DepthAnything3, SegmentAnthing3, and TraceAnything for accurate object/hand motion tracking.
    * Designed and implemented a **data augmentation and generation pipeline** in the SAPIEN simulation environment to improve robustness and generalization for manipulation learning.
    * Ongoing project, with a planned submission to **RSS 2026**.
  - **UniDex: A Robot Foundation Suite** — June 2025 – November 2025
    * Built a **bimanual dexterous-hand manipulation platform** integrating two Franka arms, InspireHands, WujiHands, RealSense cameras, NUC, and Apple Vision Pro; deployed **the DROID-dataset robot setup** to support the above hardware.
    * Improved the **DemoGen pipeline** for **robot-manipulation data augmentation**, boosting the diversity and quality of collected demonstrations.
    * Performed **high-quality teleoperation** and collected post-training datasets for five manipulation tasks.
    * Paper In Submission to **CVPR 2026**

TECHNICAL SKILLS

- **Programming and Scripting Languages**
  Python, C/C+, Java, Bash/Shell, JavaScript/TypeScript, CUDA, LaTeX, HDML
- **Tools and Libraries**
  Pytorch, Numpy, ROS/ROS2, Sapien, IsaacGym, Polymetis
- **Hardware and Robots**
  Franka Panda, Inspire Hand, Wuji Hand, Leap Hand, X Hand, Robotiq Gripper, Apple Vision Pro, Oculus Quest, Realsense Camera, NUC