Chuanruo Ning

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EDUCATION BACKGROUND

- **Peking University**, Beijing, China
  Bachelor of Science, Turing Class in CS (hosted by Prof. John Hopcroft) Sept 2020 - Present (expected June 2024)
  GPA: 3.87/4.00 (2022-2023) **3.79**/4.00 (2021-2022)

HONORS AND AWARDS

- John Hopcroft Scholarship, Peking University, 2022
- Peking University Dean's Scholarship, Peking University, 2022
- Freshman Scholarship, Peking University, 2020

PUBLICATIONS

- **Learning Foresightful Dense Visual Affordance for Deformable Object Manipulation**
  Ruihai Wu*, **Chuanruo Ning***, Hao Dong (* denotes equal contribution, order determined by coin flip)
  ICCV 2023
  Project: https://hyperplane-lab.github.io/DeformableAffordance/

MANUSCRIPTS

- **Where2Explore: Few-shot Affordance Learning for Unseen Novel Categories of Articulated Objects**
  Chuanruo Ning*, Ruihai Wu*, Haoran Lu, Kaichun Mo, Hao Dong (* denotes equal contribution)
  Under review of NeurIPS 2023
- **Learning Environment-Aware Affordance for 3D Articulated Object Manipulation under Occlusion**
  Ruihai Wu*, Kai Cheng*, Yan Zhao, **Chuanruo Ning**, Guanqi Zhan, Hao Dong
  Under review of NeurIPS 2023

RESEARCH EXPERIENCE

- Research Intern, CCVL Lab, Johns Hopkins Univeristy *2023.6 – Present*
  - **3D Part Detection,** Supervisor: Ph.D. Candidate Angtian Wang, Prof. Alan Yuille
- Research Assistant, Center on Frontiers of Computing Studies, Peking University *2022.12 – Present*
  - **Few-shot Affordance Learning for Articulated Objects**, Supervisor: Dr. Kaichun Mo (NVIDIA), Prof. Hao Dong
  - Efficientlymanipulate articulated objects in novel categories with minimal explorations on limited novel instances.
  - Propose 'Similarity' to measure semantic similarity between local geometries across different categories.
  - Enable the model to perform few-shot learning on novel categories by discovering uncertain yet important areas.
- Research Assistant, Hyperplane Lab, Center on Frontiers of Computing Studies, Peking University *2022.1 – 2023.5*
  - **Foresightful Deformable Object Manipulation**, Supervisor: Ph.D. Candidate Ruihai Wu, Prof. Hao Dong
  - Learn dense visual representations that reveal the dynamic and kinematic properties of deformable objects.
  - Propose a novel training pipeline to take the future states after one manipulation step into consideration.
  - Train the model in a reversed step-by-step manner to make it aware of 'potential', thus finding the global optimals.

SKILLS

- **Language**: Chinese: native English: proficient (TOEFL 110)
- **Deep Learning Frameworks**: PyTorch (Proficient), TensorFlow (Proficient)
- **Programming languages:** Python, C&C++