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: 3.89/4.00 (2022-2023)   **3.79**/4.00 (2021-2022)

HONORS AND AWARDS

- Huatai Securities Scholarship, Peking University, 2023
- Merit Student, Peking University, 2023
- John Hopcroft Scholarship, Peking University, 2022
- Peking University Dean's Scholarship, Peking University, 2022
- Freshman Scholarship, Peking University, 2020
- National College Entrance Exam: Ranking 4/320000+, 2020

PUBLICATIONS & MANUSCRIPTS   (* denotes equal contribution)

- Part321: Recognizing Object Parts in 3D from a 2D Image Using 1-Shot Annotations. **Under Review**

  Chuanruo Ning, Jiawei Peng, Yaoyao Liu, Jiahao Wang, Yining Sun, Alan Yuille, Adam Kortylewski, Angtian Wang
- Where2Explore: Few-shot Affordance Learning for Unseen Novel Categories of Articulated Objects. **NeurIPS 2023**

  Chuanruo Ning, Ruihai Wu, Haoran Lu, Kaichun Mo, Hao Dong
- Learning Environment-Aware Affordance for 3D Articulated Object Manipulation under Occlusion. **NeurIPS 2023**

  Kai Cheng*, Ruihai Wu*, Yan Shen, **Chuanruo Ning**, Guanqi Zhan, Hao Dong
- Learning Foresightful Dense Visual Affordance for Deformable Object Manipulation. **ICCV 2023**

  Ruihai Wu*, **Chuanruo Ning***, Hao Dong

RESEARCH EXPERIENCES

- Research Intern, CCVL Lab, Johns Hopkins Univeristy   *2023.6 – Present*
  - **3D Part Detection from a Single 3D Annoation,** Supervisor: Ph.D. Candidate Angtian Wang, Prof. Alan Yuille
  - Explore zero-shot object part segmentation that only requires a single 3D annotation for part definition.
  - Establish the 3D to 3D correspondence for part transfer across diverse object meshes.
  - Establish 3D to 2D correspondence for render-and-compare based part detection.
- Research Intern, Center on Frontiers of Computing Studies, Peking University   *2022.12 – 2023.7*
  - **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 Intern, 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, GRE 322+3.5)

ACADEMIC SERVICE

- **Reviewer**: CVPR 2024, AAAI 2024