FACULTY MENTOR
Xiaolong Wang

PROJECT TITLE
Imitation Learning for Dexterous Manipulation

PROJECT DESCRIPTION
Description: We study on learning complex dexterous skills from human videos. Example project: https://yzqin.github.io/dexmv/

This project can accommodate both remote and in-person students.

INTERNS NEEDED
2 Students

PREREQUISITES
1. Research experience and publication in reinforcement learning and 3D computer vision;
2. Experience with MANO/SMPL models, 6D object pose
3. Familiar with undergraduate-level linear algebra and calculus
4. Experience with real robots/hardware motors and sensors
**FACULTY MENTOR**
Xiaolong Wang

**PROJECT TITLE**
Vision-Guided Locomotion Control

**PROJECT DESCRIPTION**
Description: We study on learning complex dexterous skills from human videos. Example project: https://yzqin.github.io/dexmv/

This project can accommodate both remote and in-person students.

**INTERNS NEEDED**
2 Students

**PREREQUISITES**
1. Research experience and publication in reinforcement learning and computer vision;
2. Experience with Arduino and Raspberry Pi
3. Familiar with undergraduate-level linear algebra and calculus
4. Strong coding skills in C++
5. Experience with real robots/hardware motors and sensors
FACULTY MENTOR
Xiaolong Wang

PROJECT TITLE
Robot Arm Manipulation with Reinforcement Learning

PROJECT DESCRIPTION
Description: We studied vision-based RL policy for diverse manipulation tasks. Example project: https://nicklashansen.github.io/lookcloser/

This project can accommodate both remote and in-person students.

INTERNS NEEDED
2 Students

PREREQUISITES
1. Research experience and publication in reinforcement learning;
2. Experience with Arduino and Raspberry Pi
3. Experience with ROS framework
4. Familiar with undergraduate-level linear algebra and calculus
5. Strong coding skills in C++
6. Experience with real robots/hardware motors and sensors
**FACULTY MENTOR**
Xiaolong Wang

**PROJECT TITLE**
Self-Supervised Learning of 3D from Videos

**PROJECT DESCRIPTION**
Description: Learning 3D structure and motion from videos. Example project: https://zlai0.github.io/VideoAutoencoder/

This project can accommodate both remote and in-person students.

**INTERNS NEEDED**
2 Students

**PREREQUISITES**
1. Experience with 3D vision and deep learning
2. Familiar with undergraduate-level linear algebra and calculus
FACULTY MENTOR
Xiaolong Wang

PROJECT TITLE
Learning to Generate Grasps

PROJECT DESCRIPTION
Description: Generate a natural and physical plausible grasp / motion given an input 3D object. Example project: https://hwjiang1510.github.io/GraspTTA/

This project can accommodate both remote and in-person students.

INTERNS NEEDED
2 Students

PREREQUISITES
1. Experience with 3D vision and deep learning
2. Familiar with undergraduate-level linear algebra and calculus
**FACULTY MENTOR**
Xiaolong Wang

**PROJECT TITLE**
TriFinger Manipulation

**PROJECT DESCRIPTION**
Description: We are searching for interns who are interested in robotics research with hardware experience. Specifically, the intern will work on a recent built TriFinger robot in our lab by MAE students (https://drive.google.com/file/d/1CHQfUowxHkvB-Dhi0Us0cXQS8qDpiVL/view?usp=sharing).

This project will be in person.

**INTERNS NEEDED**
2 Students

**PREREQUISITES**
1. Experience with Arduino and Raspberry Pi
2. Familiar with undergraduate-level linear algebra and calculus
3. Strong coding skills in C++
4. Experience with real robots/hardware motors and sensors
FACULTY MENTOR
Xiaolong Wang

PROJECT TITLE
Self-Supervised Representation Learning from Videos

PROJECT DESCRIPTION
Description: We are interested in learning generalizable representation from videos with self-supervised learning. Example project: https://jerryxu.net/VFS/

This project can accommodate both remote and in-person students.

INTERNS NEEDED
2 Students

PREREQUISITES
1. Experience in large scale visual representation learning
FACULTY MENTOR
Xiaolong Wang

PROJECT TITLE
Content Generation with Implicit Functions

PROJECT DESCRIPTION
Description: We are interested in using implicit function in image and video synthesis tasks. Example project: https://yinboc.github.io/liif/

This project can accommodate both remote and in-person students.

INTERNS NEEDED
2 Students

PREREQUISITES
1. Experience in content generation;
2. Experience in 3D deep learning.
FACULTY MENTOR
Xiaolong Wang

PROJECT TITLE
3D Articulation Modeling

PROJECT DESCRIPTION
Description: We are interested in using implicit function to model general articulated object. Example project: https://jitengmu.github.io/A-SDF/

This project can accommodate both remote and in-person students.

INTERNS NEEDED
2 Students

PREREQUISITES
1. Experience with 3D vision and deep learning
2. Familiar with undergraduate-level linear algebra and calculus