

AIYU CUI

(814)722-3773 ◇ aiyucui2@illinois.edu ◇ cuiaiyu.github.io

EDUCATION

University of Illinois at Urbana-Champaign, IL

Expected May 2023

Pursing Ph.D. in Computer Science (*Advised Dr. Svetlana Lazebnik*)

Pennsylvania State University, PA

August 2014 - May 2018

B.S. Honor in Computer Science, Minor in Mathematics

Overall GPA: 3.94

Honor Thesis *Multi-Person Tracking for 3D Humans* (*Advised by Dr. Robert Collins*)

RESEARCH PROJECTS

Fashion-based Text-to-Image Re-Identification

supervised by Drs. Svetlana Lazebnik and Julia Hockenmaier

June 2019 - Present

- Leverage fashion garments and attribute to improve text-to-image person retrieval.
- Learning fair representation for language-vision task to give rare attributes enough consideration.

Deepfake Detection by Non-Verbal Body Language

supervised by Dr. Bo Li

Sept 2019 - Present

- By assuming there is no artifacts in deepfake videos, we propose a model to automatically extract motion-based human features to detect deepfake.
- Multi-modal (audio, video, caption) approach to learn a knowledge base of non-verbal language.

Robust Fall Detection by Pose Attention

The 1st place at AI-Hackathon-II NCSA-NVIDIA

Nov 2019

- We provide a robust method to detect human falling in real time. Our solution works well in never-seen random YouTube videos.

Debias on Multiple Task

supervised by Dr. Svetlana Lazebnik

Jan 2019 - May 2019

- Learn fair representation which can mitigate the dependency between a task and an unwanted attribute. (e.g. gender and occupation classification.) We examine tasks including detection/segmentation, retrieval, visual relationship detection.

Fine-grained Human Motion Analysis from Multimodal Data

supervised by Drs. Yanxi Liu and Robert Collins

Apr 2017 - May 2018

- precisely score how well a sport is accomplished by a human subject from multi-modal data.
- Track poses of multiple persons.

3D Human Motion Tracking

- on Motion capture data. (*supervised by Dr. Robert Collins*) Apr 2017 - May 2018
- revisit on video data. (*supervised by Dr. David Forsyth*) Apr 2019 - May 2019

WORK EXPERIENCE

UIUC Vision Group, Urbana, IL

August 2018 - Present

Research Assistant (advised by Prof. Svetlana Lazebnik)

- Working on gender debias on text-to-image re-identification.

- Work on decompose a task into basic semantic units and then amplify the interested semantics (e.g. conditional retrieval) or mute the interested semantics (e.g. debias).

Aptiv (originally nuTonomy), Santa Monica, CA

May 2019 - August 2019

Research Internship (supervised by Drs. Alex Lang and Oscar Beijbom)

- Worked on data augmentation by Generative Adversarial Networks(GANs) and evaluate the effectiveness of generated data in real-life self-driving scenarios.

Lab of Perception, Action and Cognition, State College, PA

Jan 2017 - May 2018

Undergrad Research Assistant (advised by Profs. Robert Collins and Yanxi Liu)

- Worked on action recognition, motion analysis and tracking for sports and health application with video and motion capture data.

SKILLS

Deep Learning

recurrent models, generative models, encoder/decoder style models

- adversarial learning, compositional learning, interpretable learning
- Machine Learning, Computer Vision, NLP

Tools

Python, PyTorch, C++/C, Matlab, Java, **CUDA**, Git, Shell, OpenGL, Vicon, SQL, HTML/CSS