DANDAN SHAN

Office 3929, 2260 Hayward St, Ann Arbor, MI, 48109
(01)734-2722-999 ⋄ dandans@umich.edu ⋄ ddshan.github.io

EDUCATION

University of Michigan - Ann Arbor, MI, USA *Aug 2020 - Present*
Ph.D. student, Computer Science and Engineering

University of Michigan - Ann Arbor, MI, USA *Aug 2018 - May 2020*
M.S.E., Electrical and Computer Engineering

Soochow University, Jiangsu, China *Sep 2014 - Jun 2018*
B. Eng., Software Engineering

PUBLICATION

COHESIV: Contrastive Object and Hand Embedding Segmentation In Video
Dandan Shan*, Richard E.L. Higgins*, David F. Fouhey. NeurIPS 2021 (acceptance rate=26%).

Understanding Human Hands in Contact at Internet Scale
Dandan Shan, Jiaqi Geng*, Michelle Shu*, David F. Fouhey. CVPR 2020 (Oral, acceptance rate=5.7%).

RESEARCH EXPERIENCE

COHESIV: Contrastive Object and Hand Embedding Segmentation In Video
NeurIPS 2021 Oct 2020 - Present
Graduate Student Research Assistant, CSE, University of Michigan *Advisor: David Fouhey*

- Designed the method to generate "responsibility" maps as pseudo-labels on 3 large video datasets
- Designed and Implemented COHESIV model architecture to predict hand and held object masks
- Trained COHESIV models and conducted evaluation

Understanding Human Hands in Contact at Internet Scale
CVPR 2020 (Oral) Jan 2019 - June 2020
Graduate Student Research Assistant, CSE, University of Michigan *Advisor: David Fouhey*

- Built a large-scale YouTube video dataset (100 Days of Hands) of hands in contact with objects with learning systems consisting of 131 days of footage
- Trained a multi-task hand-object detector with custom data and did final evaluation
- Built a intelligent hand system that integrates full hand state prediction, a pre-trained MANO-based 3D hand mesh reconstruction model and a mesh quality classifier together
- Implemented the model to predict hand future location at pixel-level with Dilated ResNet
- Built the model to predict the hand grasp with only a shown object

TEACHING EXPERIENCE

AI4ALL Summer Program, University of Michigan Jul 2020, 2021
Project Instructor

- Designed teaching materials about basic image processing methods, like threading and filtering, and guided high school students to do the detection project
- Designed virtual background vision project to use a people segmentation model to separate foreground/background and do background effects on images/live stream, and guided high school students to do virtual background project

TALK

Aibee Jul 2021

Title: Understanding Human Hands in Contact at Internet Scale

SERVICE AND VOLUNTARY

Organizer, AI seminar, University of Michigan	Aug 2021 - May 2022
Coordinator, Computer Vision Reading Group, University of Michigan	Aug 2020 - May 2021
Webmaster, Ensemble of CSE Ladies, University of Michigan	Aug 2020 - Present
Mentor, Ensemble of CSE Ladies, University of Michigan	Sep 2019 - Dec 2019
Web designer and maintainer, Vision@UMich offical webpage	Sep 2019 - Present
Volunteer, AI Symposium at the University of Michigan	Oct 2019
Web maintainer, TEDxSuzhou official webpage	Sep 2016 - Jan 2017
Social Investigation on Children's Education Status in Ningxia Hui Autonomous Region	Jul 2015

SKILLS

Skilled in using C, C++, Java, Python, Pytorch, Tensorflow
Skilled in Image Processing, Computer Vision, Machine Learning, Web Design

HONORS AND SCHOLARSHIP

Rackham International Students Fellowship (University of Michigan)	2021
Outstanding graduate (Soochow University)	Jun 2018
Excellent Thesis (Soochow University)	Jun 2018
Grand Prize Excellent Student Scholarship	Oct 2017
Innovation Award (Soochow University)	Oct 2017
Special Award for Social Work (Soochow University)	2015, 2016, 2017
Comprehensive Performance Awards (Soochow University)	2015, 2016, 2017