

DANDAN SHAN

2388 Leslie Cir, Ann Arbor, MI 48105

(+01)7342722999 ◊ dandans@umich.edu ◊ [ddshan.github.io](https://github.com/ddshan)

EDUCATION

University of Michigan - Ann Arbor, MI, USA
PhD, CSE

Aug 2020 -

University of Michigan - Ann Arbor, MI, USA
Master of Engineering, ECE

Aug 2018 - May 2020

Soochow University, Jiangsu, China
Bachelor of Engineering, Software Engineering

Sep 2014 - Jun 2018

University of Pennsylvania, PA, USA
Global Leadership English Language and US Culture Program

Jul 2016 - Aug 2016

PUBLICATION

“**Understanding Human Hands in Contact at Internet Scale**”, Dandan Shan, Jiaqi Geng*, Michelle Shu*, David Fouhey, CVPR 2020 (Oral).

RESEARCH EXPERIENCE

Understanding Human Hands in Contact at Internet Scale
CVPR2020 (Oral)

Jan 2019 - Present

Graduate 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

Gaze Estimation

Feb 2016 - Sep 2016

(Independent) Academic Innovation Research Project, Soochow University

Advisor: Yong Sun

- Designed a gaze estimator by applying an unconstrained face detector and eye detector, refining eye region with template matching and using Sobel operator to locate pupil
- Improved accuracy by applying “libfacedetection” library to calculate the inclined angle of the face

WORK EXPERIENCE

CalmCar Vision System Co., Suzhou, China
System Development Intern

Aug 2017 - May 2018

Mentor: Shiqing Cheng

- Developed a real-time traffic lights state recognition system based on mono camera using neural networks for the **Advanced Driver Assistance System** which already used in practice in a Level-4 (High Automation) ADAS in cooperation with SAIC Motor Co. Ltd.
- Implemented functions of CAN-file parser for Offline Calmcar Control Center

TEACHING EXPERIENCE

AI4ALL Summer Program, University of Michigan

Jul 2020

Project Instructor

- Taught basic image processing methods, like threading and filtering, and guided high school students to do final projects

PROJECT EXPERIENCE

3D Motion Capture with the Built-in Camera

Computer Vision Course Project

- Collaborated to re-implemented VNet to do 3D pose estimation with a RGB camera
- Assisted with render stereo skeleton using Unity3D

Parkinson's Disease Classification using Neural Networks

AI Application Course Project

- Prepared neat brain MRI data via brain extraction and brain calibration
- Built classifier on concatenated Inception-v3 feature of 2 layers from brain MRI which outperforms 3D-CNN model

Biometrics Program

National University of Singapore

- Implemented PCA and LDA feature extractors from scratch, built PCA-based and LDA-based identifiers and evaluated the identifiers using Confusion Matrix
- Implemented face recognition with PCA and LDA respectively

SERVICE AND VOLUNTARY

Organizer, Computer Vision Reading Group, University of Michigan

Aug 2020 - Present

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 official 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

Outstanding graduate of Soochow University

Jun 2018

Excellent Thesis of Soochow University

Jun 2018

Grand Prize Excellent Student Scholarship

Oct 2017

Merit Student of Soochow University

Oct 2017

Innovation Award of Soochow University

Oct 2017

Overseas Exchange Scholarship of Soochow University **twice**

2016, 2017

Special Award for Social Work of Soochow University **3 times**

2015, 2016, 2017

Comprehensive Performance Awards of Soochow University **3 times**

2015, 2016, 2017

1st Prize in National English Competition for College Students

May 2017

1st Prize of Excellent Student Scholarship **twice**

2015, 2016

Jiangsu Provincial Government Scholarship

Sep 2016

1st Prize in "Creation is unlimited" Social Practice Competition of Soochow University

May 2015