

# YUFEI YE(JUDY)

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GitHub: JudyYe, Google Scholar

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## EDUCATION

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**Carnegie Mellon University**

*2019 - present*

Ph.D student in Robotics.

Advisors: Prof. Abhinav Gupta and Prof. Shubham Tulsiani

**Carnegie Mellon University**

*2017 - 2019*

M.S. in Robotics. (thesis)

Overall GPA: 4.14/4.3

**Tsinghua University**

*2013 - 2017*

B.S. in Computer Science and Technology. (Graduate with honors)

Overall Rank: 5/127

**Beijing No.4 High School**

*2010 - 2013*

## RESEARCH INTEREST

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**Computer Vision**

3D Reconstruction, Video Prediction

**Robotics**

Visual Representation for Manipulation

**Machine Learning**

Graph representation learning, Relational learning

## PUBLICATION

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Yufei Ye, Poorvi Hebbar, Abhinav Gupta, and Shubham Tulsiani. “Diffusion-Guided Reconstruction of Everyday Hand-Object Interaction Clips” in *submission* 2023.

Yufei Ye, Xueting Li, Abhinav Gupta, Shalini De Mello, Stan Birchfield, Jiaming Song, Shubham Tulsiani, and Sifei Liu. “Affordance Diffusion: Synthesizing Hand-Object Interactions” in *CVPR* 2023.

Yufei Ye, Shubham Tulsiani, and Abhinav Gupta. “What’s in your hands? 3D Reconstruction of Generic Objects in Hands” in *CVPR* 2022.

Yufei Ye, Shubham Tulsiani, and Abhinav Gupta. “Shelf-supervised Mesh Prediction in the Wild” in *CVPR* 2021.

Yufei Ye, Dhiraj Gandhi, Abhinav Gupta, and Shubham Tulsiani. “Object-centric Forward Modeling for Model Predictive Control.” in *CoRL* 2019.

Yufei Ye, Maneesh Singh, Abhinav Gupta\*, and Shubham Tulsiani\*. “Compositional Video Prediction” in *ICCV* 2019. (\* indicates equal contribution.)

Xiaolong Wang\*, Yufei Ye\*, and Abhinav Gupta. “Zero-shot Recognition via Semantic Embeddings and Knowledge Graphs” in *CVPR* 2018. (\* indicates equal contribution.)

Haozhi Huang, Xiaonan Fang, Yufei Ye, Songhai Zhang, and Paul L. Rosin. “Practical automatic background substitution for live video” in *Computational Visual Media* 2017

## ACADEMIC SERVICES

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Reviewer for CVPR, ECCV, ICCV, ICLR, NeurIPS, ICML, 3DV, WACV, MVAP

MSR Admission Committee (2020, 2021)

## SELECTED AWARDS

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NVIDIA Graduate Fellowships (2022-2023)  
TP-Link Scholarship (2017)  
Singapore Technologies Engineering China Scholarship (2015, 2016, and 2017)  
National Scholarship, by the Ministry of Education of China (2014)  
Student Service Excellence Award, by Tsinghua Computer Science Dept.(2016)  
Sports Outstanding Award (2014, 2016, and 2017), Hall of Fame, by Tsinghua Computer Science Dept.

## OTHER PROJECT EXPERIENCE

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**Propagating Video Object Labels with Graph Auto-Encoders** *Feb - June 2018*  
*Supervisor: Prof. Abhinav Gupta* *CMU*

- Video object detection in semi-supervised setting.
- Discover objects with Graph Auto-Encoder by inferring edges existence on temporal-spatial graphs.
- Bootstrap video detector with the automated labeled objects by 2% mAP.

**Learning to Fine-Grained Grasping with Wearable Devices** *May - Oct 2016*  
*Supervisor: Prof. Shi-Min Hu* *Tsinghua*

- Learn the fine-grained grasping configuration compatible with human prior.
- Responsible for capturing demonstration of human hand. Capture 3d hand pose with wearable gloves and Kinect in Unity environment.

**Locating Abnormality in OCT Images with Image-level Annotation** *Dec 2016 - May 2017*  
*Supervisor: Prof. Yankui Sun(Graduate Thesis)* *Tsinghua*

- Classify and detect abnormality on retinal coherence tomography(OCT) images with image-level annotations on middle scale dataset.
- Use supervised dictionary to predict not only a label but also a pixel-wise abnormality score map.

**Somatic Game with Hand Detection in VHDL on FPGA Board** *April - June 2015*  
*Course Project* *Tsinghua*

- Best project in Digital Logic Design. Selected into the new edition of textbook.
- Be the first in the history of class to connect RGB camera to the FPGA board.
- Write the communication protocol. Implement a fundamental hand detector in VHDL.

## TEACHING EXPERIENCE

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16-824, Visual Learning and Recognition(2020 Spring)  
16-726, Learning-based Image Synthesis(2021 Spring)

## RELEVANT COURSES

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### ML related

10-701 Intro to ML (A+)  
Probability and Statistic (100)

### CV related

16-720 Computer Vision(A+)  
16-824 Visual Learning(A)  
15-858 Discrete Differential Geometry(A)

### Robotics related

16-711 Kinematics, Dynamics, and Control (A+)

### CS related

Data Structure and Algorithm (2nd in class)  
Software Engineering(3rd in class)  
Digital Logic Design (1st in class)  
Operating System, Intro to Compilation  
System Architecture, Intro to Network  
Object-Oriented Programming, etc

## CODING LANGUAGES AND TOOLS

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Languages: Python, C++, MATLAB, Java, VHDL  
ML Tools: Pytorch, Tensorflow, Caffe

## EXTRA-CIRRICULAR

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### **Sports**

Chairman of Sports Dept., CS Student Union

Badminton: 1st in Mid-Atlantic Collegiate tournament

100m Hurdle: 2nd in Beijing College Sports Meeting

Running: 1st in CMU RDR PGR

### **Art**

Violin: has played for 18 years

Shot and produced the documentary *Fugue*