

# Yu-Chuan Su

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## RESEARCH INTERESTS

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- Computer Vision — semantic understanding, mobile vision, 360°/omni-directional/VR vision, object detection, video analysis, event recognition, active vision, video summarization
- Machine Learning — deep learning, multi-modality learning, scalable learning algorithm, convolutional neural network on graph, spectral domain neural network
- Data Mining — user intention understanding, event discovery

## EDUCATION

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### **The University of Texas at Austin**

August 2014 - August 2019

*Ph.D. in Computer Science*

- Advisor: Prof. Kristen Grauman
- Thesis: Learning for 360° Video Compression, Recognition, and Display
- GPA: 3.92 (0~4 scale)

### **National Taiwan University**

September 2012 - June 2014

*M.S. in Computer Science*

- Advisor: Prof. Winston H. Hsu
- Thesis: Large Scale Mobile Visual Recognition
- GPA: 4.27 (0~4.3 scale)

### **National Taiwan University**

September 2006 - June 2011

*B.S. in Computer Science and Physics*

- GPA: 91.11 (0~100 scale)

## AWARDS AND FELLOWSHIPS

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- **Google PhD Fellowship 2017**
- **Best Application Paper Award, ACCV 2016**
- **Best Thesis Award, Chinese Image Processing and Pattern Recognition Society 2015**
- **Calhoun Graduate Excellence Fellowship**
- **KDD Cup 2013**
  - Author-Paper Identification Challenge (Track 1) – **1st place** (in 561 teams)
  - Author Disambiguation Challenge (Track 2) – **1st place** (in 241 teams)
- **College Student Research Training Fellowship**
  - Fellowship for B.S. research from National Science Council, Taiwan
- **Academic Achievement Award, National Taiwan University**
  - President's Award 4 times (top 5% academic performance in semester)
  - Dean's Award (top 10% academic performance at graduation)

## SELECTED PUBLICATIONS

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- [Yu-Chuan Su](#), Soravit Changpinyo, Xiangning Chen, Sathish Thoppay, Cho-Jui Hsieh, Lior Shapira, Radu Soricut, Hartwig Adam, Matthew Brown, Ming-Hsuan Yang, Boqing Gong  
**2.5D Visual Relationship Detection**  
arXiv, 2021
- [Yu-Chuan Su](#), Raviteja Vemulapalli, Ben Weiss, Chun-Te Chu, Philip Andrew Mansfield, Lior Shapira, Colvin Pitts  
**Camera View Adjustment Prediction for Improving Image Composition**  
arXiv, 2021
- [Yu-Chuan Su](#), Kristen Grauman  
**Learning Compressible 360° Video Isomers**  
IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI) 2020
- [Yu-Chuan Su](#), Kristen Grauman  
**Kernel Transformer Networks for Compact Spherical Convolution**  
Conference on Computer Vision and Pattern Recognition (CVPR) 2019
- [Yu-Chuan Su](#), Kristen Grauman  
**Learning Compressible 360° Video Isomers**  
Conference on Computer Vision and Pattern Recognition (CVPR) 2018
- [Yu-Chuan Su](#), Kristen Grauman  
**Learning Spherical Convolution for Fast Features from 360° Imagery**  
Advances in Neural Information Processing Systems (NIPS) 2017
- [Yu-Chuan Su](#), Kristen Grauman  
**Making 360° Video Watchable in 2D: Learning Videography for Click Free Viewing**  
Conference on Computer Vision and Pattern Recognition (CVPR) 2017 (Spotlight)
- [Yu-Chuan Su](#), Dinesh Jayaraman, Kristen Grauman  
**Pano2Vid: Automatic Cinematography for Watching 360° Videos**  
Asian Conference on Computer Vision (ACCV) 2016 (Oral, Best Application Award)
- [Yu-Chuan Su](#), Kristen Grauman  
**Detecting Engagement in Egocentric Video**  
European Conference on Computer Vision (ECCV) 2016 (Oral)
- [Yu-Chuan Su](#), Kristen Grauman  
**Leaving Some Stones Unturned: Dynamic Feature Prioritization for Activity Detection in Streaming Video**  
European Conference on Computer Vision (ECCV) 2016
- [Yu-Chuan Su](#), Tzu-Hsuan Chiu, Yin-Hsi Kuo, Chun-Yen Yeh, Winston H. Hsu  
**Scalable Mobile Visual Classification by Kernel Preserving Projection over High-Dimensional Features**  
IEEE Transactions on Multimedia 2014
- [Yu-Chuan Su](#), Tzu-Hsuan Chiu, Yan-Ying Chen, Chun-Yen Yeh, Winston H. Hsu  
**Enabling Low Bitrate Mobile Visual Recognition – A Performance versus Bandwidth Evaluation**  
ACM Multimedia 2013 (Oral)
- [Yu-Chuan Su](#), Tzu-Hsuan Chiu, Guan-Long Wu, Chun-Yen Yeh, Felix Wu, Winston H. Hsu  
**Flickr-tag Prediction using Multi-modal Fusion and Meta Information**  
ACM Multimedia 2013 (Grand Challenge)

- Chen-Wei Tsai, Yu-Chuan Su, Guan-De Li, Jeng-Da Chai  
**Assessment of Density Functionals with Correct Asymptotic Behavior**  
Physical Chemistry Chemical Physics 2013
- Yu-Chuan Su, Guan-Long Wu, Tzu-Hsuan Chiu, Winston H. Hsu  
**Evaluating Gaussian Like Image Representation Over Local Features**  
International Conference on Multimedia and Expo (ICME) 2012
- Guan-Long Wu, Yu-Chuan Su, Tzu-Hsuan Chiu, Winston H. Hsu  
**Scalable Mobile Video Question-Answering System with Locally Aggregated Descriptors and Random Projection**  
ACM Multimedia 2011 (Grand Challenge)

## RESEARCH EXPERIENCE

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**With Prof. Kristen Grauman**  
*Graduate Research Assistant*

August 2014 - August 2019  
*Computer Science Department, UT Austin*

- Research in computer vision and machine learning
- Attention analysis in ego-centric video
- Feature triage in streaming activity detection
- Vision in 360° videos

**With Prof. Winston H. Hsu**  
*Masters Student*

July 2012 - June 2014  
*Computer Science Department, NTU*

- Research in multimedia analysis and machine learning
- Mobile-friendly visual recognition
- Deep learning for video event detection using transfer learning

**With Prof. Winston H. Hsu**  
*Undergraduate Researcher*

July 2010 - August 2011  
*Computer Science Department, NTU*

- Research in multimedia analysis and retrieval
- Video question answering and event detection on mobile devices
- Investigate the properties of gaussian like image representations

**With Prof. Jeng-Da Chai**  
*Undergraduate Researcher*

August 2009 - August 2011  
*Physics Department, NTU*

- Research in Density Functional Theory and Time Dependent Density Functional Theory
- Develop new long-range corrected functionals using laplacian correction
- Study the properties of different long-range correction schemes
- Implement LB94 model potential on Q-Chem 4.0

## PROFESSIONAL ACTIVITIES

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### Invited Talks

- Learning for 360 Compression and Convolution, National Tsing Hua University, January 2018
- Graduate Seminar, National Taiwan University, December 2017
- 6th Workshop on Intelligent Cinematography and Editing, Lyon, April 2017
- Vision and Learning Meet-Up: Recent Advances and Experience Sharing from Overseas Taiwanese Scholars, Academia Sinica, January 2017

### Organizing Committee

- ICCV Workshop on 360 Perception and Interaction, 2019  
Webpage: <https://360pi.github.io/iccv19>
- ECCV Workshop on 360 Perception and Interaction, 2018  
Webpage: <https://360pi.github.io/eccv18>

### Journal Reviewer

- Data Mining and Knowledge Discovery (DAMI)
- IEEE Transactions on Multimedia (TMM)
- IEEE Transactions on Visualization and Computer Graphics (TVCG)
- Computer Vision and Image Understanding (CVIU)
- IEEE Transactions on Graphics (TOG)
- International Journal of Computer Vision (IJCV)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)
- IEEE Transactions on Image Processing (TIP)

### Program Committee / Reviewer

- WACV 2017, UIST 2017, SIGGRAPH Asia 2017, WACV 2018, CVPR 2018, SIGGRAPH Asia 2018, EPIC 2018, NIPS 2018, ACCV 2018, CVPR 2019, ICML 2019, TVX 2019, ICCV 2019, NeurIPS 2019, CVPR 2020, ICML 2020, ECCV 2020, ACCV 2020

## WORK EXPERIENCE

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### Google

*Research Scientist*

November 2019 - Present

- Work at Google Research

### Google

*Software Engineer Intern*

May 2018 - August 2018

- Work on unsupervised video understanding

### Yahoo!

*Technical Intern*

July 2013 - August 2013

- Work on Yahoo! knowledge graph project with Yahoo! search team