

# Zhenyu Wu

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## EDUCATION

- Texas A&M University, College Station, Texas** 08/2017-05/2021  
Doctor of Philosophy, Computer Science  
Advisor: Prof. Zhangyang (Atlas) Wang  
GPA 4.0/4.0
- The Ohio State University, Columbus, Ohio** 08/2015-05/2017  
Master of Science, Computer Science  
Advisor: Prof. Han-Wei Shen  
Core GPA 4.0/4.0 (Overall 3.91/4.0)
- Shanghai Jiao Tong University, Shanghai, China** 09/2011-06/2015  
Bachelor of Engineering, Information Security  
Overall GPA 3.45/4.0

## PUBLICATION

- Z. Wu\***, K. Suresh\*, P. Narayanan, H. Xu, H. Kwon, and Z. Wang, “*Delving into Robust Object Detection from Unmanned Aerial Vehicles: A Deep Nuisance Disentanglement Approach*”, In Proceedings of IEEE International Conference on Computer Vision (**ICCV**), 2019.
- H. Wang\*, **Z. Wu\***, Z. Wang, Z. Wang, and H. Jin, “*Privacy-Preserving Deep Visual Recognition: An Adversarial Learning Framework and A New Dataset*”, Submitted to IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), under review.
- P. Uplavikar, **Z. Wu**, and Z. Wang, “*All-In-One Underwater Image Enhancement using Domain-Adversarial Learning*”, The IEEE Conference on Computer Vision and Pattern Recognition Workshop on Bridging the Gap between Computational Photography and Visual Recognition (**CVPR UG2+ Workshop**), 2019.
- Z. Wu**, Z. Wang, Z. Wang, and H. Jin, “*Towards Privacy-Preserving Visual Recognition via Adversarial Training: A Pilot Study*”, In Proceedings of European Conference on Computer Vision (**ECCV**), 2018.
- J. Wu, Y. Wang, **Z. Wu**, Z. Wang, A. Veeraraghavan, and Y. Lin, “*Deep k-Means: Re-Training and Parameter Sharing with Harder Cluster Assignments for Compressing Deep Convolutions*”, In Proceedings of International Conference on Machine Learning (**ICML**), 2018.

## RESEARCH INTERESTS & TECHNICAL SKILLS

**Research Interests:** *Visual Privacy Protection*, Object Detection, Neural Network Model Compression  
**Platforms/Frameworks:** OpenGL, CUDA, OpenCV, *TensorFlow*, *PyTorch*, *Caffe*

## PROFESSIONAL EXPERIENCE

**Tencent America, Palo Alto, CA** 05/2019-08/2019

Position: Computer Vision Research Intern with Dr. Shih-Yao Lin

*Hand Synthesis from Pose and Style: a Data Augmentation Approach for 3D Hand Pose Estimation*

- Defined the problem of synthesizing hand from pose and style
- Collected the first hand dataset addressing diversity by including volunteers from difference races
- Proposed an style transfer approach using generative models to synthesize hands from conditioned pose and style

**Adobe Research, San Jose, CA** 01/2019-04/2019

Position: Deep Learning Research Intern with Dr. Zhaowen Wang

*Visual Privacy Shredder: a Machine Unlearning Approach for Privacy Protection in Generative Models*

- Defined the problem of unlearning on generative models
- Investigated the memorization issue of generative models on training data
- Proposed an unlearning approach to protect the data violating privacy or copyright

**Army Research Lab West, Los Angeles, CA** 05/2018-08/2018

Position: Computer Vision Research Intern with Dr. Heesung Kwon

*Object Detection in Low-Resolution Drone Imagery*

- Formulated an adversarial learning pipeline to improve the drone-based detection performance
- Utilizing the free attributes of flying altitude, viewing angle and weather condition to learn nuisance disentangled features

**Texas A&M University, College Station, TX** 08/2017-12/2018

Position: Graduate Research Assistant with Dr. Zhangyang Wang

*Privacy-Preserving Visual Recognition via Adversarial Learning*

- Fulfilled the privacy-preserving purpose by applying learnable active degradation on image/video data in smart home setting
- Formulated a three-party game among the utility, the privacy budget and the degradation module
- Proposed novel training strategies, evaluation protocols, and result visualization methods
- Collected a benchmark dataset by annotating privacy-related attributes on existing action recognition dataset (ongoing)

**The Ohio State University, Columbus, OH** 08/2016-12/2016

Position: Graduate Teaching Assistant

- Instructor of CSE 1223: Introduction to Programming in Java
- Prepared course materials and served in lab hours

**Shanghai Jiao Tong University, Shanghai, China** 01/2015-06/2015

Position: Graduate Research Assistant with Dr. Cunqin Hua

*Wireless LAN Rogue AP Detection System Prototype*

- Developed a prototype that can identify naïve Rogue APs
- The server was developed by Web.py framework and the client was running on Android device

**Siemens PLM Software, Cincinnati, OH** 05/2016-08/2016

Position: Research Assistant with Dr. Pengcheng Liu

*Visual Recognition using Deep Learning*

- Built a 5-layer-ConvNet to classify images generated from CAD software using TensorFlow
- Leveraged LSTM+CNN architecture to localize multiple objects of interest in one image
- Collected a data set for classification and localization tasks using NX

**Siemens PLM Software, Shanghai, China**

07/2014-02/2015

Position: Research Assistant with CTO: Dr. George Allen

*1. Modeling with Curved Triangles*

- Worked on a curved triangle algorithm to give better results in graphical display
- Derived the Curved Triangle as a triangular Bezier patch from a flat triangle with 3 normals to 3 points
- Implemented the curved triangles using NXOpen libraries, and tested on different geometric models
- Possible Application includes refining tessellation for display, 3D printing and faster model transmission

*2. Code Editor by Roslyn (Microsoft Open Compiler Technologies)*

- Improved the code editor component in NX (CAD software) using Roslyn Code Analysis technology
- Implemented an editor prototype supporting Indenting, Syntax Highlighting, Code Completion, Intellisense and Verbosity Cleaning
- Developed the editor as a Windows Forms application supporting both Visual Basic and C# features

## **ACTIVITIES**

### **Conference Reviewers**

- AAAI 2019, WACV 2018, ICIP 2017