Zhenyu Wu

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EDUCATION

Texas A&M Unversity, 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, Z. Wang, Y. Yuan, J. Zhang, Z. Wang, and H. Jin, *"Black-Box Diagnosis and Calibration on GAN Mode Collapse: A Case Study on Face Generation"*, Neural Information Processing Systems (**NeurIPS**), 2020, under review.

Z. Wu*, H. Wang*, Z. Wang, Z. Wang, and H. Jin, *"Privacy-Preserving Deep Visual Recognition: An Adversarial Learning Framework and A New Dataset"*, IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2020.

Z. Wu*, S. Hoang*, S. Lin, Y. Xie, W. Fan, Y. Lin, and Z. Wang, *"3D-Aware Multi-modal Guided Hand Generation for 3D Hand Pose Synthesis"*, ACM International Conference on Multimedia (**ACM MM**), 2020

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"*, IEEE International Conference on Computer Vision (**ICCV**), 2019.

P. Uplavikar, **Z. Wu**, and Z. Wang, *"All-In-One Underwater Image Enhancement using Domain-Adversarial Learning"*, 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"*, 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"*, 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 AI Lab, Palo Alto, CA 05/2019-08/2019
Position: Computer Vision Research Intern with Dr. Wei Fan
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
- Colleced 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 & AWARDS

Challenge Awards
- CVPR 2020 Low-Power Computer Vison Challenge-Video Track: **2nd Place out of 11 Teams**

Conference Reviewers
- ECCV 2020, CVPR 2019, AAAI 2019, WACV 2018, ICIP 2017