Yutong Zheng

CIC 1308, Electrical and Computer Engineering, Carnegie Mellon University
Pittsburgh, PA 15213, USA
412-708-4145 • yutongzh@andrew.cmu.edu
webpage: https://yutongzheng.github.io/

Research Interests

Generative Adversarial Networks, Disentangled Representations, Computer Vision.

Education

Carnegie Mellon University (CMU) **Sep,2016–present**
Ph.D. of Electrical and Computer Engineering *Pittsburgh*

Carnegie Mellon University (CMU) **Aug,2014–Dec,2015**
Master of Biomedical Engineering *Pittsburgh*

Nanjing University (NJU) **Aug,2010–Jun,2014**
Bachelor of Science in Life Sciences *Nanjing*

Relevant Coursework

Probabilistic Graphical Models; Machine Learning; Convex Optimization; Intermediate Statistics; Pattern Recognition; Deep Learning; Deep Reinforcement Learning; Neural Data Analysis.

In the Pipeline

Unsupervised method for face synthesis using efficient geometry-aware 3D Generative Adversarial Networks (GANs). (Preparing for ECCV 2022)

Identity-aware 3D Face synthesis with diverse expression using minimum supervision.

Publication

Yutong Zheng, Yu-Kai Huang, Ran Tao, Zhiqiang Shen, and Marios Savvides. *Unsupervised Disentanglement of Linear-Encoded Facial Semantics.* CVPR 2021.

Zhiqiang Shen, Mingyang Huang, Jianping Shi, Zechun Liu, Harsh Maheshwari, **Yutong Zheng**, Xiangyang Xue, Marios Savvides, and Thomas S. Huang. *CDTD: A Large-Scale Cross-Domain Benchmark for Instance-Level Image-to-Image Translation and Domain Adaptive Object Detection.* IJCV 2021.

Dipan Pal, Chandrasekhar Bhagavatula, **Yutong Zheng**, Ran Tao, and Marios Savvides. *Is pose really solved? a frontalization study on off-angle face matching.* WACV 2019.

Yutong Zheng, Dipan K. Pal and Marios Savvides, *Ring loss: Convex Feature Normalization for Face Recognition.* CVPR 2018.

Chenchen Zhu, **Yutong Zheng**, Khoa Luu, and Marios Savvides. *Enhancing interior and exterior deep facial features for face detection in the wild.* FG 2018.

Chenchen Zhu*, **Yutong Zheng***, Khoa Luu, and Marios Savvides. *CMS-RCNN: Contextual Multi-scale Region-based CNN for Unconstrained Face Detection.* In Deep learning for biometrics, pp. 57-79. Springer, Cham, 2017.

T. Hoang Ngan Le, Chenchen Zhu, **Yutong Zheng**, Khoa Luu, and Marios Savvides. *DeepSafeDrive: A grammar-*

aware driver parsing approach to Driver Behavioral Situational Awareness (DB-SAW). Pattern Recognition 66 (2017): 229-238.

Yutong Zheng*, Chenchen Zhu*, Khoa Luu, Chandrasekhar Bhagavatula, T. Hoang Ngan Le, and Marios Savvides. *Towards a deep learning framework for unconstrained face detection.* BTAS 2016.

T. Hoang Ngan Le, Chenchen Zhu, **Yutong Zheng**, Khoa Luu, and Marios Savvides. *Robust hand detection in vehicles.* ICPR 2016.

Chenchen Zhu, **Yutong Zheng**, Khoa Luu, T. Hoang Ngan Le, Chandrasekhar Bhagavatula, and Marios Savvides. *Weakly supervised facial analysis with dense hyper-column features.* CVPRW 2016.

T. Hoang Ngan Le, **Yutong Zheng**, Chenchen Zhu, Khoa Luu, and Marios Savvides. *Multiple scale faster-rcnn approach to driver's cell-phone usage and hands on steering wheel detection.* CVPRW 2016.

Yutong Zheng, Ruonan Jia, Yiqing Qian, Yang Ye, and Changhong Liu. *Correlation between electric potential and peristaltic behavior in Physarum polycephalum.* BioSystems 132 (2015): 13-19.

Tech Reports / Projects

Yutong Zheng, Chenchen Zhu, Ran Tao, *Critical Region Highlighting with Deep Reinforcement Learning for Image Recognition Tasks.* (Spring, 2017, Course Project)

Yutong Zheng, Bing Liu, Ying Zhang, *Convolutional Neural Network for Sentence Modeling.* (Spring, 2015, Course Project)

Yutong Zheng, *Hybrid Language Model with Hidden Markov Model and Latent Dirichlet Relocation.* (Spring, 2015, Course Project)

Yutong Zheng, Bingzhen Ma, Yimu Wang, *Salt and Pepper Denoising based on Kernel Regression.* (Fall, 2014, Course Project)

Yutong Zheng, Raied Aljadaany, *Iris Center Localization with Consensus Voting Algorithm Based on Image Gradient.* (Fall, 2014, Course Project)

Yutong Zheng, *Object Detection Algorithm with HOG features and RBF kernel SVM.* (Fall, 2014, Course Project)

Professional Tasks

Regularly serve as a reviewer for CVPR, ICCV, ECCV, WACV, AAAI.

Professional Experience

Carnegie Mellon University **Jul,2021–present**
Ph.D. Student as Project Member at Oosto (formerly AnyVision)
Worked on generative models as data augmentation method to improve model performance.

Carnegie Mellon University **Jul,2018–Dec,2020**
Ph.D. Student as Project Member at Bossa Nova Robotics
Worked on retail product matching. Project was eventually delivered to Walmart.

Carnegie Mellon University **Aug,2015–Aug,2016**
Research Assistant at CyLab Biometrics Center
Worked on developing face detection and recognition models with neural networks. Project was eventually delivered to the US government for criminal investigation in 2018.

Patents

Marios Savvides, Khoa Luu, **Yutong Zheng**, and Chenchen Zhu. *Methods and software for detecting objects in images using a multiscale fast region-based convolutional neural network.* U.S. Patent 10354362, issued July 16, 2019.

Marios Savvides, Dipan Kumar Pal, **Yutong Zheng**. *Convex Feature Normalization for Face Recognition.* U.S. Patent 2021034984, issued Feburary 04, 2021.

Marios Savvides, **Yutong Zheng**, Yu-Kai Huang. *Class-Identity-Preserving Data Augmentation via Unconstrained Semantic Feature Disentanglement.* Expected to be issued at Feburary 15, 2022.

Skills

Programming Languages: Python, C/C++, CUDA.
Software: PyTorch, TensorFlow, MATLAB, Docker, Caffe.
Operating Systems: Linux, Windows, Mac OS.
Biological Experiences: Protein Structural Modeling, Neural System Modeling.