# Zhuoqian Yang

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## EDUCATION

**Carnegie Mellon University**, Robotics Institute — Pittsburgh, PA

- M.S. in Computer Vision | Cumulative GPA: 4.04/4.3 — Aug 2019 – Dec 2020

**Beihang University**, School of Software Engineering — Beijing

- B.E. in Software Engineering | GPA: 88.1/100, Overall Ranking: 6/149 — Sep 2015 – Jun 2019

## SELECTED PUBLICATIONS

[1] Zhuoqian Yang*, Wentao Zhu*, Wayne Wu*, Chen Qian, Qiang Zhou, Bolei Zhou, Chen Change Loy, "TransMoMo: Invariance-Driven Unsupervised Video Motion Retargeting," CVPR 2020. * denotes equal contribution.

[2] Zhuoqian Yang, Yang Yang, Kun Yang, Ziquan Wei, "Non-rigid image registration with dynamic Gaussian component density and space curvature preservation," IEEE Transactions on Image Processing, 28(5), 2584-2598.

[3] Zhuoqian Yang, Zengchang Qin, Jing Yu, Yue Hu, "Scene Graph Reasoning with Prior Visual Relationship for Visual Question Answering," ICIP 2020.

## EXPERIENCE

**Fujitsu Laboratories America**, Research Intern — Remote, US

**Semantic Facial Image Manipulation using 2D/3D Modalities**, *sponsored MSCV capstone project*
Supervisor: *Dr. Laszlo Jeni, Koichiro Niinuma* — Ongoing since Feb 2020

- Building a facial expression manipulation model to generate photorealistic images based on FACS.
- Designed a two-stage pipeline to disentangle the expression manipulation process: (i) manipulate image geometry using 3D information of the face, (ii) inpaint textures of facial expression such as wrinkles.

**SenseTime**, Research Intern — Beijing

**TransMoMo: Invariance-Driven Unsupervised Video Motion Retargeting**, *CVPR 2020*
Supervisor: *Wayne Wu* — May 2019 - Nov 2019

- Designed an autoencoder framework to learn latent representations of human motion from unpaired videos.
- Achieved unsupervised representation disentanglement by exploiting invariance properties of three orthogonal factors of variation including motion, structure, and view-angle.

## RESEARCH

**Scene Graph Reasoning with Prior Visual Relationship for Visual Question Answering**, *ICIP 2020*
Supervisor: *Assoc. Prof. Zengchang Qin* — Jul 2018 - Dec 2018
Intelligent Computing and Machine Learning Lab, Beihang University Beijing

- Designed a graph neural network approach to enable agents to reason visual relationships on scene graphs.
- Introduced prior knowledge of visual relationships via visual relationship metric learning. A deep semantic space constrained by visual context and language priors is learned for visual relationships.

**Multi-Temporal Remote Sensing Image Registration Using Deep Convolutional Features**, *IEEE Access*
Supervisor: *Assoc. Prof. Yang Yang* — Jan 2018 - Apr 2018
Engineering Research Center of GIS Technology in Western China, Yunnan Normal University Kunming

- Proposed a VGG-pyramid feature based multi-temporal remote sensing image registration method.
- Improved RMSE by 20% on remote sensing images with temporal appearance changes.

**Non-rigid Image Registration with Dynamic Gaussian Component Density and Space Curvature Preservation**, *IEEE TIP*, Supervisor: *Assoc. Prof. Yang Yang* — Mar 2017 - Dec 2017
Engineering Research Center of GIS Technology in Western China, Yunnan Normal University Kunming

- Designed a dynamic Gaussian component density to progressively exploit available image information and provide sufficient credible correspondences for image registration.
- Devised a space curvature preservation to improve the plausibility of estimated transformation.

## COURSES

10-601 Machine Learning - A+, 16-720B Computer Vision - A, 15-462 Computer Graphics - A
16-811 Math Fundation for Robotics - A, 15-463 Computational Photography - Ongoing