

Zhuoqian Yang

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EDUCATION	<p>Carnegie Mellon University, Robotics Institute Pittsburgh, PA</p> <ul style="list-style-type: none">▪ M.S. in Computer Vision Cumulative GPA: 4.04/4.3 Aug 2019 – Dec 2020▪ Courses: Machine Learning (A+), Computer Vision (A), Computer Graphics (A), Math for Robotics (A), Visual Learning & Recognition (A-), Computational Photography (Ongoing), Geometry for Vision (Ongoing) <p>Beihang University, School of Software Engineering Beijing</p> <ul style="list-style-type: none">▪ B.E. in Software Engineering GPA: 88.1/100, Overall Ranking: 6/149 Sep 2015 – Jun 2019
SELECTED PUBLICATIONS	<p>[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. * equal contribution.</p> <p>[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.</p> <p>[3] Zhuoqian Yang, Zengchang Qin, Jing Yu, Yue Hu, “Scene Graph Reasoning with Prior Visual Relationship for Visual Question Answering,” ICIP 2020.</p>
EXPERIENCE	<p>Fujitsu Laboratories America, Research Intern Remote, US</p> <p>Semantic Facial Image Manipulation using 2D/3D Modalities, sponsored MSCV capstone project</p> <p>Supervisor: Dr. Laszlo Jeni, Koichiro Niinuma Ongoing since Feb 2020</p> <ul style="list-style-type: none">▪ 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.▪ Working towards a top conference publication. <p>SenseTime, Research Intern Beijing</p> <p>TransMoMo: Invariance-Driven Unsupervised Video Motion Retargeting, CVPR 2020</p> <p>Supervisor: Dr. Wayne Wu May 2019 - Nov 2019</p> <ul style="list-style-type: none">▪ 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.▪ Achieved motion retargeting MSE 20% smaller than the supervised SOTA with our unsupervised method.
RESEARCH	<p>Scene Graph Reasoning with Prior Visual Relationship for Visual Question Answering, ICIP 2020</p> <p>Supervisor: Assoc. Prof. Zengchang Qin Jul 2018 - Dec 2018</p> <p>Intelligent Computing and Machine Learning Lab, Beihang University Beijing</p> <ul style="list-style-type: none">▪ 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. <p>Non-rigid Image Registration with Dynamic Gaussian Component Density, IEEE TIP</p> <p>Supervisor: Assoc. Prof. Yang Yang Mar 2017 - Dec 2017</p> <p>Engineering Research Center of GIS Technology in Western China, Yunnan Normal University Kunming</p> <ul style="list-style-type: none">▪ 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.
PROJECTS	<p>CNN Image Registration, 200+ stars on Github Mar 2018</p> <ul style="list-style-type: none">▪ Devised a VGG-pyramid feature based multi-temporal remote sensing image registration method.▪ Improved RMSE by 20% on remote sensing images with temporal appearance changes.
SKILLS	<p>Programming Language: Python, C/C++, MATLAB, Bash, Java, Javascript, SQL</p> <p>Tools: Pytorch, TensorFlow, LaTeX, Linux, Vue.js, MySQL</p>

