

# Yuqian Zhou (Francis Zhou)

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## RESEARCH INTEREST

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My current research focuses on the practical image restoration tasks with real photo degradation, and the image generation tasks to enhance human-computer interaction.

## EDUCATION

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**University of Illinois at Urbana-Champaign (UIUC),** *Aug. 2017 - Present*  
**Image Formation and Processing Group (IFP), Beckman Institute**  
Ph.D. candidate in Electrical and Computer Engineering  
Cumulative GPA: 4.0/4.0

**The Hong Kong University of Science and Technology (HKUST),** *Aug. 2015 - Aug. 2017*  
**Neuromorphic Interactive System Lab, ECE**  
Master of Philosophy (M.Phil.) in Electronics and Computer Engineering  
Cumulative GPA: 4.04/4.3

**The Hong Kong University of Science and Technology (HKUST),** *Aug. 2013 - Aug. 2015*  
B.Eng. in Computer Engineering  
Cumulative GPA: 4.086/4.3, Ranking: 1/130

**Sun Yat Sen University (SYSU), Guangzhou, China** *Aug. 2011 - Aug. 2013*  
UG Student in Computer Science  
Cumulative GPA: 3.8/4.0, Ranking: 1/20

**Peking University, China** *Jul. 2014 - Aug. 2014*  
Globex Engineering School Summer Exchange Program  
Courses: Nanomedicine

## RESEARCH PROJECTS

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**Applied Science Group of Microsoft & Microsoft Research** *May. 2019 - Aug. 2019*  
*Summer Internship, advised by Tim Large* *Redmond, WA*

- Image Restoration for Under-display Camera

**Megvii co. USA Research** *May. 2018 - Aug. 2018*  
*Summer Internship, advised by Jue Wang* *Redmond, WA*

- Real Image Blind Denoising
- Deformable Style Transfer

**Image Formation and Processing Group, UIUC** *Aug. 2017 - Present*  
*Research Assistant. Supervised by Prof. Thomas Huang* *Champaign, IL*

- (Ongoing) Old photo and painting restoration
- Talking face synthesis
- Representation Learning and unsupervised learning
- Emotion Recognition and Generation through Multi-modal Data and fMRI Emotion Detection
- Low-resolution Face Detection and Recognition

**Jump Trading Research Lab, UIUC***Research Assistant. Following Ken Terao*

Aug. 2017 - Aug. 2018

*Champaign, IL*

- Single-stock Generalized Price Prediction using Convolutional Neural Network
- Multi-stock Price Prediction using Recurrent Neural Network

**Neruomorphic Interactive System Lab, HKUST***Research Assistant. Supervised by Prof. Bertram Shi*

Aug. 2015 - Aug. 2017

*HKSAR, China*

- Facial Expression Classification through Deep Networks with Deep Feature Investigation and Selection
- Frontal Facial Action Unit Intensity Estimation using LSTM and CNN model
- Pose-dependent Facial Action Unit Intensity Estimation by Pose-invariant Feature Learning
- Photo-realistic Facial Expression Generation through Conditional Difference Adversarial Autoencoder
- Smiling Intensity Estimation Online Platform
- Facial Expression Classification Online Platform
- Face Enactment and Expression Transfer with Morphing
- Embedding Smiling Controlled Interface to Game 'Flappy Bird'
- Gaze and Manual Controlled Telepresence and Virtual Reality Robot

**TECHNICAL STRENGTHS**

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**Computer Languages**

C/C++, Python, MATLAB, C#, Java, JS, Object-C

**Software & Tools**

HTML, LaTeX, MS Office, Adobe PS &amp; Premiere

**Deep Learning Framework**

Keras, Tensorflow, Theano, Caffe, PyTorch

**RELEVANT COURSES**

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**Core Courses**

Machine Learning

Computer Vision

Pattern Recognition

Representation Learning

Big Data Applications

**Other Courses**

Linear System Theory

Introduction to Robotics

Computer Network and Security

Computer Architecture

Computer Software Engineering

**PUBLICATIONS**

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**Zhou, Y.**, Gu, K., Huang, T. "FLNet: Landmark Driven Fetching and Learning Network for Faithful Talking Facial Animation Synthesis" (AAAI2020, to appear).

**Zhou, Y.**, Jiao, J., Huang, H., Wang, Y., Wang, J., Shi, H., Huang, T. "When AWGN-based Denoiser Meets Real Noises" (AAAI2020, to appear).

Deng, D., Chen, Z., **Zhou, Y.**, Shi, B. "Integrating Micro- and Macro-motion for Video Emotion Recognition" (AAAI2020, to appear).

Fu, Y., Wei, Y., Wang, G., **Zhou, Y.**, Shi, H., Huang, T. "Self-similarity Grouping: A Simple Unsupervised Cross Domain Adaptation Approach for Person Re-identification" (ICCV2019, Oral).

**Zhou, Y.**, Lin, Y., Faghri, F., Shaw, M., Campbell, R. "Analysis and Prediction of Unplanned Intensive Care Unit Readmission using Recurrent Neural Networks with Long Short-Term Memory" (PLoS ONE, July).

Liu, J., Wu, C., Wang, Y., Xu, Q., **Zhou, Y.**, ..., Wang, J. "Learning Raw Image Denoising with Bayer Pattern Unification and Bayer Preserving Augmentation" (CVPRW2019, Winner of NTIRE2019 Raw).

He, T., Huang H., Li, Y., **Zhou, Y.**, Wu, C., Wang, J., Soatto, S. "GeoNet: Deep Geodesic Networks for Point Cloud Analysis" (CVPR2019, Oral).

**Zhou, Y.**, Jiao, J., Huang, H, Wang, J, and Huang, Thomas "Adaptation Strategies for Applying AWGN-based Denoiser to Realistic Noise" (AAAI2019, Student Abstract).

Fu, Y., Wei, Y., **Zhou, Y.**,...,and Huang, Thomas "Horizontal Pyramid Matching for Person Re-identification" (AAAI2019)

**Zhou, Y.**, Gu, K., and Huang, Thomas "Unsupervised Representation Adversarial Learning Network: from Reconstruction to Generation" (IJCNN2019).

**Zhou, Y.**, Liu, D., and Huang, Thomas "Survey of Face Detection on Low-quality Images. " 13th IEEE International Conference on Automatic Face & Gesture Recognition (FG 2018), Xi'an, China, 2018.

**Zhou, Y.** and Shi, B.E. "Photorealistic Facial Expression Synthesis by the Conditional Difference Adversarial Autoencoder", Accepted by The seventh International Conference on Affective Computing and Intelligent Interaction (ACII2017), San Antonio Texas, 2017.

**Zhou, Y.**, Pi, J, and Shi, B.E. "Pose-independent Facial Action Unit Intensity Regression Based on Multi-task Deep Transfer Learning." 12th IEEE International Conference on Automatic Face & Gesture Recognition (FG 2017), Washington DC, 2017. (Winner of the FERA2017 Challenge, Oral)

**Zhou, Y.** and Shi, B.E. "Action Unit Selective Feature Maps in Deep Networks for Facial Expression Recognition." International Joint Conference on Neural Networks (IJCNN2017), Anchorage Alaska, 2017.(Oral)

**Zhou, Y** and Lu, S. "Discovering Abnormal Patches and Transformations of Diabetics Retinopathy in Big Fundus Collections." Computer Science & Information Technology (CSIT2017), Zurich Switzerland, 2017.(Oral)

## HONORS & AWARDS

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Aug. 2019	3rd Place of Dunhuang e-Heritage Challenge at ICCV2019
Jun. 2019	1st Place of NTIRE2019 Raw Image Denoising Challenge at CVPR2019
Nov. 2017	3rd Price of the 15th 'Challenge Cup' of China
Jun. 2017	1st Place of 2017 Facial Expression Recognition Challenge (FERA2017)
Mar. 2015	Best Oral Paper of ICBDA2017
Dec. 2015	Finalist of Three-Minute-Thesis(3MT) Challenge of HKUST
Nov. 2015	2015 Academic Achievement Medal of HKUST (top 0.1%)
May. 2015	2015 HKUST Outstanding Student (top 1%)
May. 2015	2015 HKUST Academic Excellence Award (top 5%)
May. 2014, Sep. 2014, 2015	HKUST Dean's List (top 10%)
Mar. 2012	3rd Price at ACM Competition of SYSU

## SCHOLARSHIPS

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Aug. 2015 - Aug. 2017	PG Studentship of HKUST
Aug. 2014	First-class Scholarship Scheme for Continuing UG Students of HKUST
Aug. 2014	HKTIIT Scholarship
Aug. 2013	First-class Scholarship of SYSU
Aug. 2013	Jerry Yan Scholarship

## PROFESSIONAL ACTIVITIES

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<b>Lead Organizer</b>	ICCV Workshop on Real-World Recognition (RLQ2019)
<b>Organizing Committee</b>	3rd ICBDA
<b>Organizing Committee</b>	2018 IJCAI Affective Computing Workshop
<b>Reviewer</b>	IEEE Transactions on Cybernetics
<b>Reviewer</b>	IEEE Transactions on Computational Survey
<b>Reviewer</b>	IEEE Transactions on Affective Computing

<b>Reviewer</b>	2019 CVPR Workshop on LID
<b>Reviewer</b>	2017 ICCV workshop on Analysis and Modeling of Faces and Gestures
<b>Reviewer</b>	2018 CVPR (External)
<b>Reviewer</b>	2020 CVPR
<b>Reviewer</b>	Journal of Visual Communication and Image Representation
<b>Interviewer</b>	HKUST Undergraduate Student Admission with DSE

## TALK

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*Topic: Deep AU-Selective Feature Maps for Expression Recognition.*

16-th Japan-China-Korea Joint Workshop on Neurobiology and Neuroinformatics (NBNI 2016)

Sponsor: HKUST ECE Department

Dec. 2016

*Topic: Computer Architecture and Basic Principles*

Tecent Technology Entering Middle School Students

Sponser: Tecent Co., SYSU and SYSU Affiliated Middle School

Feb. 2013

*Topic: Introduction to Speech Recognition*

Tecent Technology Entering Middle School Students

Sponser: Tecent Co., SYSU and SYSU Affiliated Middle School

Jan. 2013

## LEADERSHIP AND ACTIVITIES

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Aug. 2012 - Aug. 2013	Chairman of the Maxcell Resource Sharing Association at SYSU
May. 2011 - May. 2012	Group Leader of the Academic Department of SYSU Student Union
May. 2009 - May. 2010	Chairman of the Student Union of Harbin No.3 Senior High
Dec. 2010	Delegate of Estonia at WHO of Harvard Model United Nations Conference
Aug. 2010	Academic Advisor of the Heilongjiang Model United Nations Conference
Dec. 2009	China-Denmark Culture Exchange Program
Dec. 2007	Junior Journalist of China-US Culture Exchange Program

## VOLUNTEER WORK

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Jun. 2013 - Feb.2013	International Volunteer of Maldives Environment Protection and Education
Sep. 2015, Sep. 2016	Student Ambassador of New Semester Series Events
Jan. 2017	Volunteered at the Anniversary of China-HK Scholar Association
Sep. 2015 - Aug. 2017	Tutor in Hong Kong Tutor Association
Sep. 2013 - Aug. 2017	HKUST Exchange Student Partner
Aug. 2013	Blood Donation at Harbin, China