**Yuwei (Victoria) Qiu**

Tsinghua University, P.R. China

Homepage: <https://victoriaqiu.github.io/>

Email: [qyw14@mails.tsinghua.edu.cn](mailto:qyw14@mails.tsinghua.edu.cn) | [vic\_thustudy@126.com](mailto:vic_thustudy@126.com)

**Education**

**Tsinghua University** ***Beijing, China***

Department of Electronic Engineering: Senior undergraduate, Overall GPA: 3.8/4.0 Aug. 2014 – Jul. 2018

Featured Courses

Student Research Training Project Practicum Image Processing Computer Graphics

Media & Recognition Advanced Matlab Programming C/C++ Computer Program Design

**University of Pennsylvania** ***Philadelphia, PA***

GRASP Laboratory, Department of Computer and Information Sciences Summer 2017

* Undergraduate Visiting Research Assistant with *Prof. Jianbo Shi*

**Carnegie Mellon University** ***Pittsburgh, PA***

The Language Technology Institute, School of Computer Science Aug. 2018 – Jul. 2019 (Expected)

Master of Computational Data Science (MCDS)

Featured Courses

Introduction to Computer System

**Publications**

1. **Yuwei Qiu**, Huimin Ma, and Lei Gao.

“Hardness Prediction for Object Detection Inspired by Human Vision”

*9th International Conference on Image and Graphics (ICIG 2017)*. Accepted as oral presentation (~8%).

1. Lei Gao, Huimin Ma, **Yuwei Qiu** and Chenhao Liu

“A Human Visual System Inspired Database For Object Detection”

To appear in the *Journal of Image and Graphics*.

**Honors And Awards**

* Person of the Year 2017 Award by Tsinghua University *(top 5 in 3300*) 2017
* Hong Qian Comprehensive Scholarship *(top 15 in 262)* 2017
* *Three times* Annual Scholarship for Outstanding Research, Art and Social Performances *(top 15 in 262)* 2015 – 2017
* Outstanding Research Assistant by *Stanford EE (top 4 in 146)* 2015
* Outstanding Team Captain *(top 1 in 1200 participants)*,

First prize for Global Business Leadership Competition at *Intel, Silicon Valley* *(top 1 in 126 teams)* 2015

**Research Experience**

**Tsinghua University, Intellectual Graphs and Texts Processing Laboratory *Beijing, China***

Graduation Project advised by *Prof. Shengjin Wang*

**Multi-label Image Classification** 03. 2018 – 06. 2018

* Aimed to propose a Deep Learning framework for multi-label natural context scenes classification.
* Concatenated region proposal network and feature pyramid network with VGG, ResNet, DenseNet and Dual Path Network (ILSVRC2017 classification champion) to introduce weak detection information.
* Experimented on PASCAL2012 and MSCOCO2014 respectively increasing mean average precision by 2.2% and 1.3% compared to the-state-of-the-art method.
* Outstanding graduation paper by Tsinghua University.

**University of Pennsylvania, GRASP Laboratory *Philadelphia, PA***

Research Assistant with *Prof. Jianbo Shi*

**Skeleton Body Pose Prediction Based On First Person Videos** 07. 2017 – 09. 2018

* Constructed a multimedia model of team activities from ego-centric sequences.
* Reconstructed 3D background utilizing Structure from Motion, Multi-View Stereotype and Bundle Adjustment.
* Concatenated a joint-tracking CNN with LSTM to estimate and predict skeleton body pose of camera-holder, utilizing temporal third-person information captured by other team members.
* Applied proposed framework to ego-centric videos of real cases to show effectiveness.

**Tsinghua University, 3D Image Simulation Laboratory *Beijing, China***

Research Assistant with *Prof. Huimin Ma* (Deputy Secretary-General of China Graphics Society)

**Hardness Prediction for Object Detection inspired by Human Vision** 06. 2016 – 01. 2017

* Predicted the performance of object detection algorithms by finding regular patterns of eye-tracking data.
* Proposed novel eye-tracking features fused with feature maps of CNN to utilize complex human visual perception.
* Generated eye-tracking features directly with a jointly trained CNN to replace laborious eye-tracking experiments.
* Contributed to a first-authored paper, which has been accepted as oral presentation in ICIG 2017.

**Tsinghua University, Intellectual Graphs and Texts Processing Laboratory *Beijing, China***

Research Assistant with *Prof. Shengjin Wang*

**End-to-End Printed Chinese Text Recognition** 12. 2016 – 06. 2017

* Designed an end-to-end deep multi-pathway CNN for Chinese text recognition with 3500+ character categories.
* Utilized spatial information, logogram usage in Chinese.
* Connected with a Conditional Random Field model to utilize semantic structure, boosting accuracy by 3%.
* Achieved a precision of 96.8% on CMCC Chinese Database.
* Proposed solution was purchased by China Mobile for product improvement.

**Stanford University, Department of Electrical Engineering *Palo Alto, CA***

Participants in a remote project of *Prof. Tsachy Weissman*

**Magnetic Resonance Imaging (MRI) Registration** 10. 2015 – 12. 2015

* Improved MRI registration results by solving problems with information theory and statistical signal processing.
* Experimented with a mutual information based registration method.
* Applied a bias-corrected version of MLE estimator in smooth regime, reducing the Mean Square Error to 1%.
* Completed a technique demo and ranked 4th in 146 participants.

**Prominent Course Project**

**Tsinghua University *Beijing, China***

Course project in *Media and Recognition*

**Facial Emotion Recognition** 04. 2017 – 05. 2017

* Classified static human face images into emotion categories.
* Adopted VGG-16 and multistage fine-tuned it on open datasets including VGG-Face dataset, FER2013 public Test, FER2013 private Test and CK+.
* Selected to give a presentation to 233 students and ranked 1st in 10 teams.

Course project in *Computer Graphics*

**3-D vector text construction and texture mapping** 04. 2016 – 05. 2016

* Constructed 3D Chinese characters and texture mapped with natural scene images.
* Used high-dimensional Bézier curves and B-splines to contour the characters.
* Projected static images onto surfaces of 3D characters using Homography.
* Ranked 1st in 40 students.

**Work Experience**

**Huawei Research Beijing *Beijing, China***

Vision Researcher, Artificial Intelligence Group11. 2017 – 01. 2018

* Applied vision algorithms to real products in World’s Top Five Hundred Corporation.

**Momenta Beijing *Beijing, China***

Vision Engineer05. 2018 – 07. 2018

* .

**Skills**

Professional Computer Skills

* *Excellent in* C/C++, Matlab, Python, MxNet, Caffe, Tensorflow, Pytorch, HTML, OpenCV, OpenGL, Latex.

Languages

* *Excellent in* Mandarin (mother tongue).
* *Proficient in* English (TOEFL iBT 108/120, latest Speaking score 28/30).
* *Basic Communication skills in* Japanese and French.

**Leadership Activities**

**EE Student Union of Tsinghua EE**

President of External Communication

* Within one year, raised nearly USD 20,000 for financial sponsorship.