**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 Aug. 2014 – Jun. 2018 (Expected)

* Senior undergraduate, Overall GPA: 88/100 (3.8/4.0)
* Person of the Year 2017 Award *(top 5 in 3300*) by Tsinghua Oversea Research Program
* Outstanding Research Assistant by *Stanford EE (top 4 in 146)*

Featured Courses

Student Research Training Project (*top 10 in 500*) Production Practice Training (*top 5 in 262*)

Image Processing (*top 1 in 90*) Computer Graphics (*top 1 in 40*) Media & Recognition (*top 10 in 233*)

Advanced Matlab Programming (*top 10 in 262*) C/C++ Computer Program Design (*top 10 in 262*)

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

GRASP Laboratory, Department of Computer and Information Sciences Summer 2017

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

**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, Chenhao Liu, and **Yuwei Qiu**.

“A Human Visual Bionic Framework for Object Recognition”

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

**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**

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

Research Assistant with *Prof. Jianbo Shi*

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

* 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.

**Characterizing Psychological Problems via Interactive Devices** 09. 2017 – Present

* Expect to recognize patterns of mental diseases in behavioral and biometric data from interactive devices.
* Analyzed the data collected from psychology experiments and diseases institutes equipped with ML/DL methods.
* Still in progress. Further apply this framework to improve diagnosis of mental sickness.

**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 – Present

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

**Skills**

Professional Computer Skills

* *Excellent in* C/C++, Matlab, Caffe, Python, C#, 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.

Hosts of forums for famous professors from Ivy League

* Delivered interviews with famous professors from Duke University, University of Pennsylvania, University of Michigan and Columbia University.

**Development for Live Broadcasting of 2017 Anniversary Celebration**

Team Leader

* Unprecedented success in building a website for live broadcasting with an all-student team.
* Successfully streamed a live broadcast for 5 hours with over 5000 clicks.

**Ninth(Highest) Level of piano skills certificated by Central Conservatory of Music**