**Yuwei (Victoria) Qiu**

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**Education**

**Tsinghua University** *Beijing, China*

Department of **Electronic Engineering** Aug. 2014 – Jun. 2018 (Expected)

* Senior undergraduate, GPA: 88/100

**Featured Courses**

* Student Research Training Project (***top 10 in 500***); Production Practice Training (***top 5 in 262***); Advanced Matlab Programming (***top 10 in 262***); C/C++ Computer Program Design (***top 10 in 262***); Media & Recognition in Machine Learning (***top 10 in 233***); Digital Image Processing (***top 1 in 90***); Computer Graphics (***top 1 in 40***)

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

GRASP Laboratory, Department of **Computer and Information Sciences** Summer 2017

* Undergraduate Visiting Research Assistant to *Prof. Jianbo Shi*
* Person of the Year award (***top 20 out of 3300 Tsinghua students***)

**Selected Honors And Awards**

* Hong Qian Comprehensive Scholarship (***top 15 out of 262 Tsinghua students***, awarded for outstanding academic performance and extracurricular achievement)
* ***Three times*** Annual Scholarship for Outstanding Academic, Art and Social Performances (***top 15 out of 262***)
* Person of the Year 2017 awarded by Tsinghua Overseas Research Program (***top 20 out of 3300 Tsinghua students***)
* Outstanding Research Assistant awarded by ***Stanford EE*** (***top 4 out of 146 international students***)
* Outstanding Team Captain, First prize for Global Leadership Competition by ***Intel, Silicon Valley*** (***top 1 out of 1200 international students***)

**Publications**

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

**“Hardness Predictions for Object Detection Inspired by Human Vision”**

*9th International Conference of Image Graphics (ICIG 2017)*. Accepted as **oral presentation** (~18%).

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

**“A Human Visual Bionic Framework for Object Recognition”**

Scheduled to be published in the *Journal of Image and Graphic*.

**Work Experience**

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

*Vision Researcher, Artificial Intelligence Group* 11. 2017 – Present

* World’s Top Five Hundred Corporation.
* Applied vision algorithms like text recognition and face tracking approaches to flexible machines.
* Part of the results were deployed in real products.

**Research Experience**

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

*General Robotics, Automation, Sensing & Perception (GRASP) Laboratory*

Research Assistant to ***Prof. Jianbo Shi***

**(a) On-going: Skeleton Body Pose Prediction Based On First Person Videos** 07. 2017 – Present

* Three-dimensional-reconstructed context from highly-jittery, blurry, and narrow ego-centric frames with Multi-View Stereo.
* Tracked joints with LSTM in first-person point-of-view videos to estimate and predict skeleton body pose of camera-holder.
* Experimented with real cases, including ego-centric cooking and basketball game videos, showing real-time location and skeleton body pose of camera-holder in three-dimensional context.

**Tsinghua University** *Beijing, China*

*3D Image Simulation Laboratory*

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

**(b) Hardness Prediction for Object Detection inspired by Human Vision** 08. 2016 – 2017.01

* Introduced human factors into object detection to predict the performance of automatic algorithms.
* Defined novel eye-tracking features and Eye Tracking Complexity to quantify complicated human visual process.
* Computed Eye Tracking Complexity directly with a CNN in spite of laborious eye-tracking experiments.
* Predicted object detection failures in *ILSVRC* with a precision of 0.94.
* Contributed to a **first-authored paper**, which has been accepted as **oral presentation** in *ICIG 2017*.

**(c) On-going: Characterizing Psychological Problems via Interactive Devices** 03. 2017 – Present

* Recognized patterns of mental diseases, in behavioral and biometric data from interactive devices.
* Now analyzed data collected from psychology experiments and diseases institutes, experimented ML methods.
* To improve or testify diagnosis of mental sickness with data support.

**Tsinghua University** *Beijing, China*

*Intellectual Graphs and Texts Processing Laboratory*

Research Assistant to ***Prof. Shengjin Wang***

**(d) End-to-End Printed Chinese Text Recognition Based on CNN** 12. 2016 – 2017.06

* Designed an end-to-end framework for Chinese printed text recognition.
* Constructed a THU Chinese-printed character database (the THU Chinese Database) containing 3500+ categories of Chinese characters for off-line training and validation.
* Trained a multi-pathway convolutional neural network, achieved a prevision of 96.8% on CMCC Chinese Database.
* Proposed solution was **purchased by China Mobile**.

**Stanford University** *Palo Alto, CA*

*Department of Electrical Engineering*

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

**(e) Magnetic Resonance Imaging (MRI) Registration** 10. 2016 – 2016.12

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

**Tsinghua University** *Beijing, China*

*Course project in “Media and Recognition”*

**(f) Facial Expression Recognition** Spring 2017

* Classified static images into eight categories of emotion, including anger, happiness, surprise and fear etc.
* Used VGG-16, multistage fine-tuning on various datasets including VGG-Face dataset, FER2013 public Test, FER2013 private Test and CK+.
* Selected to give a presentation and ranked the **1st out of 10** teams.

*Course project in “Computer Graphics”*

**(g) 3-D vector text construction and texture mapping** Spring 2016

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

**Skills**

**Professional Computer Skills**

* ***Proficient in*** C/C++, Matlab, Caffe.
* ***Experienced with*** Python, C#, Tensorflow, Pytorch, HTML, OpenCV, OpenGL.

**Languages**

* ***Excellent in*** English (with TOEFL iBT 108/120; 28 for Speaking).
* ***Basic Communication skill in*** Japanese and French.

**Extracurricular Activities**

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

*Team Leader*

* Built a website for live broadcasting with millions of viewers, which no previous staffers have achieved.
* Successfully streamed a live broadcast for ***5 hours with over 5000 clicks***.

**EE Student Union @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 of Pennsylvania and Columbia University.