***Yuwei Qiu***

Department of Electronic Engineering

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EDUCATION- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Tsinghua University **Beijing, China**

**B.E, Electronic Engineering** 09.2014 – 07.2018(Expected)

* **GPA**: ***88/100***
* **Related Courses**
  + **Researches:** Digital Image Processing ***(95/100)***,Computer Graphics ***(95/100)***,Student Research Training A ***(95/100)***,Student Research Training B ***(95/100)***,Production Practice ***(95/100)***,*Robotic: Perception (Coursera)*
  + **Programming:** Advanced Matlab Programming and its Application ***(95/100),*** C/C++ Computer Program Design ***(93/100)***

University of Pennsyvania **Philadelphia, PA**

**GRASP Laboratory, Computer and Information Science** 07.2017 - Present

* Undergraduate Visiting Research Assistant

PUBLICATION- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

[1] **Yuwei Qiu**, Huimin Ma and Lei Gao. “Hardness Prediction for Object Detection Inspired by Human Vision” The 9th *International Conference of Image Graphics (ICIG 2017)*. **Oral paper (~8%)**.

[2] Lei Gao, Huimin Ma, Chenhao Liu and **Yuwei Qiu**, “A Human Visual Bionic Framework for Object Recognition”, accepted and to be published in *Journal of Graphics.*

RESEARCH EXPERIENCE- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

University of Pennsylvania, Department of Computer Information Science **Philadelphia, PA**

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

Research Assistant to[**Prof. Jianbo Shi**](http://www.cis.upenn.edu/~jshi/)

Project: Body Pose Prediction Based On First Person Videos 07. 2017 – Present

* Segmented body parts in pixel level from first person videos with complex context and high speed
* Proposed possible body poses from limited hands gesture with ***LSTM***
* Completed 3-dimensional reconstruction of both environment and body pose from limited first person videos
* Generated sequences for human body motion proposals
* Now drafting a paper.

Tsinghua University, Department of Electronic Engineering **Beijing, China**

[**3-D Image Simulation Lab**](http://3dimage.ee.tsinghua.edu.cn/)**oratory**

Research Assistant to [**Prof. Huimin Ma**](http://3dimage.ee.tsinghua.edu.cn/hmm), Deputy Secretary-General of China Graphics Society

Project 1: Researches of eye-tracking devices and its applications in computer vision 07. 2016 – 02. 2017

* Theoretically quantized the human perception over scene content
* Extracted Detection Complexity, which predicts the performance of algorithms in advance
* Predicted object detection failures in *ILSVRC* with a precision of ***0.94***
* Contributed to ***a first-authored paper***, which has been selected to give an oral presentation in ***ICIG 2017***

On-going: Mathematically models of psychological problems based on interactive devices 03. 2017 – Present

* Designed mental experiments for patients suffering from autism, mania and depression
* Extracted eye-tracking features, gene information and electroencephalogram for data mining
* Now attempting to mathematically model psychological diseases

Tsinghua University, Department of Electronic Engineering **Beijing, China**

**Intellectual Graphs and Texts Processing Laboratory**

Research Assistant to **Prof. Shengjin Wang**

Project: Text recognition in natural context based on convolutional neural networks 11. 2016 – 06. 2017

* Aims at optimizing the end-to-end text recognition with convolutional neural networks
* Built up a dataset consist of ***3500+ categories***of Chinese characters
* Trained a ***multi-pathway network*** for Chinese character and sentences consist of ***3500+*** categories
* Achieved a precision of ***86.8%***
* Now drafting a paper

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

Participants in a remote project of [**Prof. Tsachy Weissman**](http://web.stanford.edu/~tsachy/)

Remote project: Information theory methods for Magnetic Resonance Imaging 12. 2015 – 02. 2016

* Explored novel methods for medical image registration
* Connected the registration problem to recent advances in information theory and statistical signal processing
* Applied and optimized methods in information theory to medical image registration
* Completed a research demo and report (ranked ***4th/146***)

Tsinghua University, Department of Electronic Engineering **Beijing, China**

Project of Computer Graphics

Course Project: Three-dimensional vector text construction and texture mapping 04. 2016 – 06. 2016

* Applied text segmentation in natural scenes with complex context information
* Used high-dimensional Bézier curves or B-splines to fit text in natural scenes
* Constructed and texture mapped three-dimensional models of the text based on two-dimensional graphs
* Ranked***1st/40***

Chinese Academy of Sciences, Institute of Computing Technology **Beijing, China**

Research Assistant to **Prof. Yongdong Zhang**

Project: Searching by images 08. 2015 – 10. 2015

* Searched by local-sensitive hashing
* Extracted pixel-level features from over ***100,000 images***
* Tested the demo on *PASCAL VOC* contained 100,000 images and attained an accuracy of***0.9***

SELECTED HONORS- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Scholarship and Fellowship

* Tsinghua Annual Undergraduate Scholarship (For outstanding academic, scientific and social achievement) **2015**
* Tsinghua Annual Undergraduate Scholarship (For outstanding social achievement) **2016**

Awards

* Outstanding Research Assistant (Stanford EE, Remote Project, ***Rank 4/144***) **2015**

ADDITIONAL INFORMATION- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

Interests

My research interests lie in image, sequence and cognitive data analysis, motivated by the goals of creating highly intelligent robots and improving interaction between users and computer.

**Researches fields that intrigue my interests:** Computer Vision/Graphics, Cognitive science, Robotics, Machine learning

Computer and Language Skills

* **Languages:**

MatLab ***(20k+ lines)***, C/C++ ***(10k+ lines)***, Python, C#, LaTeX, Linux, Verilog, MIPS Assembly Language

* **Tools:**

Caffe, Tensorflow, Pytorch, Git

* **English Skills:**

***TOEFL***: ***108*** = 28(Reading) + 27(Listening) + ***26(Speaking)*** + 27(Writing)

***GRE***: ***321*** = ***154(Verbal)*** + 167(Quantitative) + 3.5(Analytical Writing)

EXTRACURRICULUM ACTIVITIES- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -- - - - - - - - - - - - - - - - - -

**EE Student Union**

***Chairman*** in charge of ***External Communication Department of Student Union @THUEE***

* Lead a team who raised nearly ***USD 20,000*** for financial sponsorship

**Development for Live Broadcasting of 2017 Anniversary Party in EE department**

***Team leader***

* Built up a website within 3 weeks for live broadcasting with millions of audience, which none of previous staff have ever achieved
* Successfully live broadcasting the anniversary party lasting for ***5 hours with over 5000 clicks***

**Global leadership competition 2015**

***Team captain***

* Outstanding team captain
* Won the business design competition held at Intel, Silicon Valley, ***the 1st place***