**Yuwei Qiu**

Department of Electronic Engineering

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Education

**Tsinghua University** Beijing, China

B.E, Electronic Engineering Sep. 2014 – July 2018

* GPA: 87/100
* **Related Courses**
  + **Researches:** Computer Graphics (95/100), Student Research Training (95/100)
  + **Mathematics:** Calculus A (95/100)
  + **Programming:** Advanced Matlab Programming and its Application (95/100), C/C++ Computer Program Design (94/100)

Publications

[1] **Yuwei Qiu**, Huimin Ma and Lei Gao. “Hardness Prediction for Object Detection Inspired by Human Vision” accepted and to be published in *International Conference of Image Graphics 2017*.

[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 (General robotics, Automation, Sensing & Perception Laboratory, Department of Computer Information Science)**

**Research Assistant to Prof. Jianbo Shi**

**Project 1: Artificial Music Composition from First Person Videos** June. 2017 – Present

**Project 2: Body Pose Prediction Based On First Person Videos** July. 2017 – Present

* Collected data and built up a dataset consisting of 6 hours of videos.
* Segmented body parts in the pixel level from first person videos with complex context and high speed.
* Proposed possible body pose 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 writing a paper.

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

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

**Project 1:** **Researches of eye-tracking devices and its applications in computer vision** Mar. 2016 – Nov.2016

* 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 submitted to *2017 IEEE Conference on Computer Vision and Pattern Recognition*

**On-going: Mathematically models of psychological problems based on interactive devices** Nov.2016 – 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

Research Assistant to **Prof. Shengjin Wang** Dec. 2016 – June 2017

**On-going: Text recognition in natural context based on convolutional neural networks**

* 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 writing a paper

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

Participants in a remote project of **Prof. Tsachy Weissman** Dec. 2015 – Feb. 2016

**Remote project: Information theory methods for Magnetic Resonance Imaging**

* 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 Apr. 2016 – Jun. 2016

**Three-dimensional vector text construction and texture mapping**

* 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** Aug. 2015 – Oct. 2015

**Searching by images**

* Searched by local-sensitive hashing
* Tested the demo on *PASCAL VOC* contained 100,000 images and attained an accuracy of **0.95**

Selected Awards and Honors

Scholarship and Fellowship

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

Additional Information

**Interests**

* Computer vision
* Computer graphics
* Cognition
* Deep learning

**Computer and Language Skills**

* Languages: MatLab (20k+ lines), C/C++ (10k+ lines), Python, C#, Verilog, MIPS Assembly Language, LaTeX, HTML, Linux
* Tools: Caffe, Tensorflow, Pytorch
* English Skills:

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

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

Extracurricular Activities

**EE Student Union** Apr. 2016 – Present

* Chairman in charge of *External Communication Department*
* Lead a team with 27 members and raised nearly USD 10k for sponsorship

**Development for Live Broadcasting of Anniversary Party in EE department** Oct. 2016 – Dec. 2016

* 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** Jan. 2015 – Feb. 2016

* Outstanding team captain
* Won the business design competition held at Intel, Silicon Valley.