

# Qiu Jueqin

COLOR SCIENCE · COMPUTATIONAL PHOTOGRAPHY · COMPUTER VISION

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## Summary

I am currently pursuing my Ph.D degree in Color & Imaging Lab of Zhejiang University, under the supervision of Prof. Hai-song Xu. My research interests include color constancy, imaging simulation, and human-vision-system-based color reproduction. I have been cooperating with corporations as the technical lead during my postgraduate period, and are highly familiar with the digital image signal processing (ISP) pipeline in mobile platforms.

## Education

Sep 2014 – Jun 2019	PhD Candidate, College of Optic. Sci. and Engr.	Zhejiang University, China
Sep 2010 – Jun 2014	B.S., School of Instr. Sci. and Opto-Electr. Engr.	Beihang University, China

## Projects

### Applications of the Colorimetric Sensor in the ISP of Mobile Devices

ams Semiconductor, US

TECH LEAD

Feb 2017 – Dec 2018

- Developed a CNN-based AWB framework to improve the reliability of the illuminant estimation for extreme scenarios where the low-level based AWB algorithms perform poorly, with the use of ams TCS3430 sensors.
- Improved the color reproduction accuracy of images with flash.
- Dynamically controlled the brightness and chrominance of the display by monitoring the photometric and chromatic parameters in the environment.

### Digital Image Signal Processing Pipeline in Mobile Devices 🔗

Rockchip Semiconductor, CN

TECH LEAD

Oct 2015 – Sep 2017

- Devised a complete ISP solution from sensor's raw data to displayable output images, including modules of camera spectral sensitivity estimation, lens color shading correction, auto white-balancing, color correction, etc.
- The proposed ISP solution exceeded the average color reproduction performance in the industry (by the date of the test). 📄 [Obj./subj. assesment \(zh\)](#), 📄 [Single-blind test \(zh\)](#).

### Color Correction for 3D Scanning Cameras

Shining 3D, CN

TECH LEAD

May 2017 – Apr 2018

- Proposed color correction techniques for [white light + RGB CMOS] and [color light + monochrome CMOS] two types of 3D scanning cameras.
- Significantly improved the color reproduction accuracy. 🎥 [Demo video](#).

### Study on Image Quality of OLED HDR Displays 🔗

LG Display, KR

MAJOR PARTICIPANT

Jul 2016 – May 2017

- Assessed the image quality and image attributes for OLED, IPS LCD and VA LCD TVs.
- The results of visual experiments indicated that the OLED TV is superior to LED TVs in blackness, contrast, low-gradation, and artifacts, and has stronger image quality user preference.

### Study on Color Volume of HDR Displays

LG Display, KR

TECH ADVISOR






Aug 2017 – May 2018

- Originated a new color quality volume metric to remedy the poor correlation of the original  $L^*a^*b^*$  metric between the color quality volume size and the perceptual image quality.



## Publications

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- Color Constancy by Reweighting Image Feature Maps**  *IEEE Trans. Image Proc.*  
Under Review
- Image Quality Degradation of Object-Color Metamer Mismatching in Digital Camera Color Reproduction**  *Applied Optics*  
Apr 2018
- Camera Response Prediction for Various Capture Settings Using the Spectral Sensitivity and Crosstalk Model**  *Applied Optics*  
Oct 2016
- Robust Color Correction Strategy Based on Chromatic Adaptation Model** *4th ACA Conference*  
Oct 2018
- Comparison of Object-Color and Illumination Metamerism for Digital Image Color Correction**  *13th AIC Congress*  
Oct 2017
- Investigation of Impacting Factors on Camera Calibration for Spectral Sensitivity Estimation**  *3rd Conference of Asia Color Association*  
May 2016
- A Highly Tolerant Color Correction Approach for Digital Cameras**  
UNDER REVIEW *Patent*  
Apr 2018
- A Color Adaptation Model Based auto White-Balance Approach for Digital Cameras**  
LICENSED, ZL 2017 1 0442492.3 *Patent*  
Oct 2017
- An Illuminant-Adaptive Lens Color Shading Correction Approach for Digital Cameras**  
LICENSED, ZL 2016 1 0334669.3 *Patent*  
Sep 2016

## Skills

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**Language:** CET6 (521)

**Good at** Python 2/3, MATLAB

**Capable of:** TensorFlow, PyTorch, OpenCV, LaTeX, HTML/CSS, Autodesk Inventor

## Honors

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|-------------|--|
| 2016 – 2017 | Outstanding Postgraduate Student<br>Merit Postgraduate Student               |
| 2015 – 2016 | National Scholarship for Postgraduate Students<br>Merit Postgraduate Student |
| 2014 – 2015 | National Second Prize of the Challenge Cup                                   |

