

# Libing Zeng (曾立兵)

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<http://libingzeng.github.io>

## RESEARCH

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I'm interested in all topics about physically based rendering. My current research mainly focus on light transport simulation, especially MLT-type rendering algorithms.

## EDUCATION

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**Hunan Univ., P.R. China**

**2007.09—2011.06**

Bachelor in Electronic Information Engineering

Top 10% GPA (score 85.0/100); Top 1% B.S. Thesis Award

## Projects (2016.11 ~)

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### **A Remedy For Proposal Failures in Metropolis Light Transport**

Advised by [Dr. Li-Yi Wei](#).

Submitted to SIGGRAPH 2019.

The high percentage of the paths used to reconstruct the final image that carries zero radiance is a big problem for MLT-type algorithms building on bidirectional path tracing. The root cause is the failure of obtaining a complete mutation light path. We propose a novel algorithm which provides special remedy for those failures.

### **A Renderer Written From The Scratch (BART animations)**

Advised by [Dr. Li-Yi Wei](#).

This renderer mainly has two components. First, parsing animation description files (AFF); Second, rendering the three animations of BART, which is presented by Dr. Ulf Assarsson.

Some key implementations: "Multi-Jittered" sampler + "Gaussian" filter for reconstruction + Mipmap + EWA filter for texture anti-aliasing.

### **A Renderer Extended From The Book, Ray Tracing from the Ground Up**

Self learning.

I read the book and extended it from the following aspects: various objects, tessellations, 2D textures and several scenes.

### **A Renderer With Implementations Of Various NON-TRIANGULATE Surfaces**

Self learning.

This render is based on the framework of Peter Shirley's "ray tracing in one weekend" and is extended with tracing almost all of the NON-TRIANGULATE surfaces mentioned in the book, An Introduction to Ray Tracing.

## OPEN SOURCE

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### Github

<https://github.com/libingzeng>

### Blog

[https://blog.csdn.net/libing\\_zeng](https://blog.csdn.net/libing_zeng)

I summarized every topic I learned, every problem I solved and every verifiable idea I had in the journey of computer graphics, and I posted more than 200 technical reports of the summaries on my blog (written in simplified Chinese) which has over 230 followers and over 0.4 million visitors now.

## WORK EXPERIENCE

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### Guo-Yuan-Li Fruit Store (startup)

2014.06 – 2016.02

“Guo-Yuan-Li” is Chinese pinyin which means fresh fruit in orchard.

I started the fruit business, and got everything working well, then transferred it to my younger brother.

### MediaTek

2011.09 – 2014.05

Engineer, customer project leader

Lead projects and develop embeded system applications with C language.

## BACHELOR THESIS

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### The Design and Development of Experiment Teaching Management System

2011

Advised by [Dr. Shaoyuan Wang](#)

Top 1% B.S. Thesis Award

I designed a novel experiment teaching management system and implemented it with J2EE.

## AWARDS

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### Innovation of Graduation Project, Hunan Univ., P.R. China

2011

The First Prize. (top 1% in the class of 2011)

### National Inspirational Scholarship, Ministry of Education, P.R. China

2010

(top 5% in the class of 2011)

### National Univerity Students Intelligent Car Race, Ministry of Education, P.R. China

2010

The First Prize in Southern China (Top 10 in more than one hundred teams.)

I developed the software on embeded system with C language. The software controls a car model to run very fast along a chanllenging path.