

# Cheng Zhang

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## Education

### University of California, Irvine

PH.D. IN COMPUTER SCIENCE

- Supervisor: Prof. Shuang Zhao

Irvine, CA

September 2017 – July 2022

### Columbia University in the City of New York

M.S. IN COMPUTER SCIENCE

- GPA: 3.967/4.0

New York, NY

September 2015 – February 2017

### Beijing University of Technology

B.E. IN ELECTRONICS INFORMATION ENGINEERING

- GPA: 3.74/4.0
- Exchange student at **University of Illinois at Chicago** (senior year)

Beijing, China

September 2011 – June 2015

## Publications

### EFFICIENT DIFFERENTIATION OF PIXEL RECONSTRUCTION FILTERS FOR PATH-SPACE DIFFERENTIABLE RENDERING

Zihan Yu, **Cheng Zhang**, Derek Nowrouzezahrai, Zhao Dong, Shuang Zhao

ACM Transactions on Graphics (*SIGGRAPH Asia 2022*), 41(6)

### ANTITHETIC SAMPLING FOR MONTE CARLO DIFFERENTIABLE RENDERING

**Cheng Zhang**, Zhao Dong, Michael Doggett, Shuang Zhao

ACM Transactions on Graphics (*SIGGRAPH 2021*), 40(4)

### PATH-SPACE DIFFERENTIABLE RENDERING OF PARTICIPATING MEDIA

**Cheng Zhang\***, Zihan Yu\*, Shuang Zhao (\*equal contribution)

ACM Transactions on Graphics (*SIGGRAPH 2021*), 40(4)

### PATH-SPACE DIFFERENTIABLE RENDERING

**Cheng Zhang**, Bailey Miller, Kai Yan, Ioannis Gkioulekas, Shuang Zhao

ACM Transactions on Graphics (*SIGGRAPH 2020*), 39(4)

### MULTI-SCALE APPEARANCE MODELING OF GRANULAR MATERIALS WITH CONTINUOUSLY VARYING GRAIN PROPERTIES

**Cheng Zhang**, Shuang Zhao

Eurographics Symposium on Rendering (*EGSR*), 2020

### A DIFFERENTIAL THEORY OF RADIATIVE TRANSFER

**Cheng Zhang**, Lifan Wu, Changxi Zheng, Ioannis Gkioulekas, Ravi Ramamoorthi, Shuang Zhao

ACM Transactions on Graphics (*SIGGRAPH Asia 2019*), 38(6)

### FontCode: Embedding Information in Text Documents Using Glyph Perturbation

Chang Xiao, **Cheng Zhang**, Changxi Zheng

ACM Transactions on Graphics (*SIGGRAPH 2018*), 37(2)

## Patents

### SYSTEMS AND METHODS FOR STEGANOGRAPHY BASED ON TEXT FONTS

Changxi Zheng, Chang Xiao, **Cheng Zhang**

US Patent 10,755,375

### METHOD AND DEVICE FOR EFFICIENT BUILDING FOOTPRINT DETERMINATION

Lincan Zou, Liu Ren, Zeng Dai, **Cheng Zhang**

US Patent 10,553,025

## Employment

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### Meta Reality Labs

RESEARCH SCIENTIST

Redmond, WA

July 2022 - Present

- Topic: Computer graphics research (e.g., differentiable rendering, inverse rendering)

### NVIDIA Corporation

APPLIED DEEP LEARNING RESEARCH (ADLR) GROUP: RESEARCH INTERN

Remote

June 2021 - November 2021

- Topic: Differentiable rendering on GPU

### Facebook Reality Labs

GRAPHICS GROUP: RESEARCH INTERN

Redmond, WA

June 2019 - September 2019

- Topic: 3D reconstruction, differentiable rendering

### Robert Bosch LLC

HMI GROUP: MOTION CAPTURE AND RECOGNITION INTERN

Sunnyvale, CA

June 2018 - September 2018

- Topic: Automatic cycle detection and similarity evaluation of time series data

### Robert Bosch LLC

HMI GROUP: GRAPHICS RESEARCH INTERN

Palo Alto, CA

May 2017 - August 2017

- Topic: Building footprints determination for real-time shadow generation

### Columbia University

COMPUTER GRAPHICS GROUP: GRADUATE RESEARCH ASSISTANT

New York, NY

June 2016 - April 2017

- Topic: Text editing, information embedding

## Reviewer

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2022	<b>ACM SIGGRAPH</b>
2021	<b>ACM SIGGRAPH, Computer Graphics Forum</b>
2020	<b>ACM SIGGRAPH Asia</b>

## Honors & Awards

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2021	<b>Facebook Fellowship</b>	Worldwide
2013	<b>Beichuan Academic Scholarship</b>	Beijing University of Technology
2011-2014	<b>Academic Excellence Award</b>	Beijing University of Technology

## Skills

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### Programming

C, C++, Python, Matlab, T<sub>E</sub>X

### Software and Applications

Mitsuba, PyTorch, Unity3D, Blender