

# YIHENG ZHANG

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## EDUCATION

<b>B.E. in Computer Science and Technology (Honor Program of Engineering)</b> School of Electronic Information and Electrical Engineering & Zhiyuan College <i>Shanghai Jiao Tong University, Shanghai, China</i> Overall GPA: 3.94/4.3 (91.37/100), Major GPA: 3.98/4.3 (91.90/100), Rank: 9/142	Sept. 2015 - Jun. 2019
<b>Exchange Undergraduate</b> School of Engineering <i>University of Melbourne, Victoria, Australia</i> Course Grade: First Class Honours	Jun. 2017 - Jul. 2017

## RESEARCH EXPERIENCE

<b>Lab of Digital Media and Computer Vision (DMCV)</b> <i>Shanghai Jiao Tong University, Shanghai, China</i> Advisor: Lizhuang Ma (Distinguished Professor) Research Topic: path tracing, rendering denoise, deep learning etc.	Feb. 2017 - Present
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## WORKING EXPERIENCE

<b>Graphics Game Software Engineer Intern</b> <i>VCE, GSE, CVCG, Intel Asia-Pacific Research &amp; Development Ltd., Shanghai, China</i> <ul style="list-style-type: none"><li>Game Engine parallel rendering optimization and engine module C++ development</li><li>Created a public demo on UE4 to demonstrate the VCE group's improved parallel rendering</li></ul>	Sept. 2018 - Mar. 2019
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## PUBLICATIONS

<b>Light Transport Simulation via Generalized Multiple Importance Sampling</b> <i>Qi Liu, Yiheng Zhang, Lizhuang Ma - CVM 2018 Oral</i> <ul style="list-style-type: none"><li>A generalized multiple importance sampling in global illumination</li><li>Improved the efficiency of vertex connecting and merging algorithm by about 21%</li></ul>	Apr. 2018
<b>Exposure Contrast Network for Night Urban Street Scenes Understanding</b> <i>Yiheng Zhang*, Xin Tan*, Lizhuang Ma, Rynson Lau - CVPR 2019 submitted</i> <ul style="list-style-type: none"><li>An exposure-guided attention model for semantic segmentation of night street scenes</li><li>Provide first-known large scale open-source night driving semantic segmentation dataset</li><li>Improved the mean IoU on testset by 3.3% comparing to state-of-the-art method</li></ul>	Oct. 2018

## SELECTED PROJECTS

<b>Progressive Multiple Network Rendering Denoise</b> <i>DMCV Individual Research (ongoing)</i> <ul style="list-style-type: none"><li>A CNN-based offline rendering denoise network system with noise pixel prediction and few-shot training</li></ul>	Apr. 2018 - Present
<b>Interactive Object Selection Based on U-Net</b> <i>Computer Graphics Course Group Project (top 1%)</i> <ul style="list-style-type: none"><li>An open-source interactive solution for object selection (<a href="#">source</a>)</li><li>Increase accuracy by 15.91% on salient object compared with <i>Deep Interactive Object Selection (CVPR 2016)</i>.</li></ul>	Oct. 2017 - Jan. 2018

## Simple Path Tracer

Nov. 2017

*Computer Graphics Course Individual Project (top 1%)*

- Scene built and core algorithm implemented by myself, mathematical utilities courtesy: [SmallVCM](#)
- Specular, Diffuse and Phong are included

## Isochart-based Auto Geometry Mesh Cutting and UV Alignment

Apr. 2017 - Jun. 2017

*DMCV Project*

- An interactive approach to generate UV alignment of object mesh charts
- Responsible for testing and optimizing the mesh texture coordinate processing part

## SKILLS

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<b>Programming</b>	C++/C(primary), Python(good), Matlab(good), SQL(limited), D3D11(limited), JS(entry level)
<b>Technology</b>	Ray Tracing, Deep Learning, Real-time Rendering
<b>Software</b>	Microsoft Office, Visio; Adobe Photoshop, Illustrator, Premiere; Maya

## HONORS

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<b>SCSK Scholarship (top 6%)</b> <i>SCSK Corporation</i>	Oct. 2018
<b>Zhiyuan Honor Scholarship</b> <i>Zhiyuan College, Shanghai Jiao Tong University</i>	Dec. 2017
<b>Wish Scholarship (top 3%)</b> <i>Wish Ltd.</i>	Sept. 2017
<b>Meritorious Winner</b> <i>MCM/ICM Mathematical Contest in Modeling</i>	Jan. 2017
<b>Zhiyuan Honor Scholarship</b> <i>Zhiyuan College, Shanghai Jiao Tong University</i>	Dec. 2016
<b>Tung OOCL Scholarship (top 6%)</b> <i>The Tung Foundation &amp; Orient Overseas Container Line Ltd.</i>	Oct. 2016

## EXTRA-CIRRICULAR

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<b>President</b> <i>SJTU Band Union</i>	Sept. 2017 - Sept. 2018
<ul style="list-style-type: none"><li>· Head director of SJTU Soulrocker rock shows</li><li>· Assistant director of SJTU Oasis music festivals</li><li>· Contributed to a audio technology guidance website</li></ul>	
<b>Vice Director of Department of Publicity</b> <i>Student Union of SEIEE</i>	May 2016 - Sept. 2017
<ul style="list-style-type: none"><li>· Responsible for publicity work of events held by SEIEE (School of Electronic Information and Electrical Engineering)</li><li>· Hold monthly workshop to give talks of new designing trend</li></ul>	
<b>Hobbies</b>	
<ul style="list-style-type: none"><li>· Guitarist/Composer/Mix Engineer on a metal band</li><li>· Calligraphy grade 8 (max 10, China Calligrapher Association)</li><li>· 9 years experience in painting &amp; 5 years experience in graphic design</li></ul>	