

Haodong Chang

Personal Information

Name	Haodong Chang	Nationality	Chinese
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Education Experience

- Xi'an Jiaotong University** *Sept.2018-Jun.2021*
Master of Electrical Engineering *Supervisors: Prof. Mingzhe Rong (IET Fellow) & Prof. Yi Wu*
GPA: 3.7/4.0, 90/100 (Rank: 4/58)
- Xi'an Jiaotong University (Top 2 in Electrical Engineering in China)** *Sept.2014-Jun.2018*
Bachelor of Electrical Engineering *Supervisors: Prof. Dingxin Liu & Prof. Aijun Yang*
GPA: 3.68/4.3, 88.28/100 (Rank: 16/352)

Technical Skills

Languages	C++, GLSL, MATLAB, JAVA, C#
Software	LabView, SolidWorks, AutoCAD, COMSOL
Experimental Skills	Laser Optics, Spectrometer, Interferometer, Scattering Analysis

Research Experience

- Blue-noise Dithered Sampling and Perceptual Optimization for Monte Carlo Rendering**
State Key Lab of CAD&CG, Zhejiang University *Jun. 2022-present*
Research Intern *Supervisor: Dr. Zhong Ren*
 - 1) Lightweight soft rasterizer and soft path tracer based on the framework of CS180
 - 2) Reproduction of spatially and temporally blue-noise dithered sampling methods for Monte Carlo rendering
 - 3) Insights into blue-noise dither in high-dimensional scenes with large sample counts and its optimization
 - 4) Adaptive strategy for the neighborhood search used in the optimization of Monte Carlo error distribution
 - 5) Performance analysis and acceleration of perceptual error optimization algorithms for Monte Carlo rendering
- Technology Tracking and Industry Survey of Virtual Reality and Augmented Reality**
China Academy of Information and Communications Technology (CAICT) *Apr. 2020-Aug. 2020*
Research Intern *Supervisor: Dr. Kezhen Hu*
 - 1) Investigation of VR/AR devices and SoCs such as HoloLens 2 and Snapdragon XR2
 - 2) Evaluation and prediction of VR/AR applications, typical scenes, and real-time rendering techniques
- 3D Graphics Rendering**
School of Computing, National University of Singapore *Jul. 2017-Aug. 2017*
Exchange Student *Supervisor: Dr. LOW Kok Lim*
 - 1) Familiar with geometry, rasterization, global illumination and ray-tracing models
 - 2) Programmed as a C++ developer with OpenGL and got the grade of Level A
- Laser Optics and Data Augmentation of Thomson Scattering**
Xi'an Jiaotong University *Sept. 2019-Jun. 2021*
Leader *Supervisors: Prof. Yi Wu & Dr. Hao Sun*
 - 1) Highly reliable and repeatable system design, including Mie scattering, Raman scattering, Rayleigh scattering, Thomson scattering and laser-induced spectroscopy
 - 2) High signal-to-noise ratio and targeted data enhancement by optimizing hardware and data processing
 - 3) Accurate measurement of the electron density and electron temperature with high temporal resolution (15ns) and spatial resolution (78 μ m)

- **Spectrometry, Interferometry and Their Inverse Analysis**

Xi'an Jiaotong University

Sept. 2018-Dec. 2019

Core Member

Supervisors: Prof. Mingzhe Rong (IET Fellow) & Prof. Yi Wu

- 1) High-resolution spectral measurement and radial temperature reconstruction of CO₂ arcs
- 2) Fast system calibration by combining C II 657.8 nm with the Fowler-Milne method
- 3) Interferometer based on two-color Mach-Zehnder, and data processing based on FFT and unwrapped algorithm
- 4) Decoupling of micro parameters and spatial reconstruction of electron and heavy particle density

- **An Innovative Medical Device**

Xi'an Jiaotong University, The First Affiliated Hospital of Xi'an Jiaotong University

May. 2016-Nov. 2017

Leader

Supervisors: Prof. Dingxin Liu & Prof. Xiaohua Wang

- 1) Design and production of the medical device for producing plasma activated water
- 2) Better bactericidal effect than common fungicides with lower price (\$30) and no side effects on humans
- 3) Home-made liquid level sensor for automatic liquid control
- 4) First Prize of 15th National "Challenge Cup" and established cooperation with several tertiary hospitals

- **National Key R&D Program - Low and Medium Voltage DC Distribution Systems**

Xi'an Jiaotong University

Sept. 2017-Dec. 2019

Core Member

Supervisors: Prof. Yi Wu & Dr. Zhongxiao Ji

- 1) Design of the test platform for the fiber optic current sensor used in medium-voltage DC power system
- 2) Calibration of the sensor with 0-20 kA capacity and 0.2% maximum error

Selected Publications

1. Hao Sun (my tutor), **Haodong Chang**, Mingzhe Rong, Yi Wu and Hantian Zhang, "Investigation of laser-induced plasma in SF₆ at different pressures using Thomson scattering," *Physics of Plasmas*, vol. 27, no.7, Jul. 2020.
2. **Haodong Chang**, Hao Sun, Panxin He, Yanwei Nan, Fei Yang and Hantian Zhang, "Investigation on the C₄F₇N/N₂ plasmas by Thomson scattering," *The 7th International Conference on Power and Energy Systems Engineering (CPSE 2020)*, Fukuoka, Japan, 2020, online oral presentation.
3. Hao Sun, Yi Wu, Zhexin Chen, Mingzhe Rong, **Haodong Chang**, Fei Yang and Chunping Niu, "Experimental research on species compositions of nonequilibrium air plasma based on two-color Mach-Zehnder interferometry," *Physics of Plasmas*, vol. 26, no.4, Apr. 2019.
4. Yang Li, Shaodi Fan, Yi Wu, Hao Sun, **Haodong Chang**, Luqi Liang and Weiping Guan, "Measurement of radial temperature distributions of the blown CO₂ arcs under different conditions," *Plasma Science and Technology*, vol. 21, no.12, Sept. 2019.

Awards & Honors

- 2021 **Outstanding Master's Thesis**, endowed by Xi'an Jiaotong University (**23 out of 500**)
- 2019 **First Class Scholarship**, endowed by Xi'an Jiaotong University
- 2018 **Siyuan Students**, endowed by Xi'an Jiaotong University (**10 students per year**)
- 2017 **First Prize** of 15th National "Challenge Cup", endowed by Ministry of Education of China
- 2017 **First Prize** of Xi'an Jiaotong University Entrepreneurship Competition

References

Name	Title	Institution	Email
Mingzhe Rong	IEEE Senior Member & IET Fellow, Professor	Xi'an Jiaotong University	mzrong@xjtu.edu.cn
Yi Wu	Honored with the National Science Fund for Distinguished Young Scholars, Professor	Xi'an Jiaotong University	wuyic51@xjtu.edu.cn

English Proficiency Test

IELTS 7.5 (L:7.0, R:8.5, W:8.0, S:6.5)