Haodong Chang

Personal Information

Name	Haodong Chang	**Nationality**	Chinese
Mobile	(+86)156 6708 2716	**Email**	chang2468135@stu.xjtu.edu.cn
Address	No.158 Xiying Rd, Xi'an, China	**Postcode**	710043

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. Zhen Chen*

1) Investigation of VR/AR devices and SoCs such as 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 (78μm)

- **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 CO_2 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 SF_6 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 C_4F_7N/N_2 plasmas by Thomson scattering," *The 7th International Conference on Power and Energy Systems Engineering (CPESE 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 CO_2 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)