Chaoying Gu

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EDUCATION

PEKING UNIVERSITY Beijing, China 09/2018–present
School of Electronics Engineering and Computer Science

- Major in Electronic and Information Engineering, Overall GPA: **3.776/** 4.000 (1/50 in EIE Dept), Major GPA **3.825**/4.000.
- Programming & software: C++, MATLAB, Python, Verilog; LaTeX, HTML, Origin
- Languages: TOEFL 108, GRE 334(4.0)

Awards and Honors

AEON scholarship 1/2021
Third-class scholarship of Peking University 1/2020
Merit Student, Peking University 09/2019&09/2020&09/2021

PATENT

- Non-line-of-sight image reconstruction method, apparatus, and system. China Invention Patent. (9/2021 submitted)

RESEARCH EXPERIENCE

Learning-Based Computational Imaging 8/2021-present
Independent Research, Supervised by Prof. Boxin Shi, Dept. of Computer Science and Technology, Peking University

- Surveyed and presented about the simulator-trained and transfer-learned methods in computational imaging.
- Trained deep generative networks for self-made simulation datasets in NLOS.

Non-Line-of-Sight (NLOS) Imaging on Non-planar Wall 5/2021-present
Remote Internship, Supervised by Prof. Andreas Velten, Dept. of Biostatistics and Medical Informatics, University of Wisconsin Madison

- Independently implemented an edge-detection, interpolation and stitch method for SPAD array;
- Joined a collaborative project in developing and promoting fast-convolution reconstruction for non-planar relay surface, responsible for algorithm and coding.

Non-Line-of-Sight (NLOS) Imaging System and Algorithm 1/2021-8/2021
Independent Research, Supervised by Prof. Chuanchuan Yang, Institute of Advanced Optical Communication Systems and Networks, Peking University

- Mastered the theory of phasor-field virtual wave optics and Rayleigh-Sommerfeld diffraction;
- Proposed a criterion for selecting the virtual illumination function and corresponding wavelength;
- Developed a fusing algorithm of phasor-field method which can improve the reconstruction SSIM by around 20%.

Holographic Reconfigurable Intelligent Surfaces Antenna Design and Optimization 6/2020-1/2021
Independent Research, Supervised by Prof. Lingyang Song, Institute of Wireless Communication, Peking University

- Surveyed the theory and design method of hybrid beamforming and reconfigurable holographic surface;
- Modeled a communication system with several base stations equipped with RHS, and applied fractional and convex optimization algorithm to suppress undesired side-lobes.

SELECTED COURSE PROJECT

PWM Modulation System

- Mastered the basic principles of PWM modulation in communication systems
- Designed and optimized the circuit system diagram in Simulink to implement PWM modulation

Mask detection based on Faster Region-Convolutional Neural Network (R-CNN)

- Surveyed about R-CNN, Fast R-CNN, Faster R-CNN, YOLO and SSD
- Trained a PyTorch implementation of R-CNN model to detect whether people were wearing masks

Google APAC Software Product Sprint

- Implemented a personalized social application based on Django, Django REST, MySQL and Dart
- Became the most contributing participant elected by group members

Virtual Reality 3D Puzzle Game on PC Platform

- Led a group of 5 people to design and implement a VR puzzle game using Unity3D and VIVE wave SDK
- Coded to manipulate the perspective and conditional trigger of events and music