Chaoying Gu

School of Electronics Engineering and Computer Science, Peking University
+86 18751309186 | vanessagu@pku.edu.cn

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)
- Programming & software: MATLAB, Python, C++, Verilog; Latex, HTML, Origin
- Languages: TOEFL 108, GRE 334

Main Course and Score

Course	Score	Course	Score
Signal and System (Honor Track)	97	Machine Learning	90.5
Electromagnetism	91	Electrodynamics (B)	95
Quantum Mechanics (A)	98	Methods of Mathematical Physics	96
Python Programming and Application	94	Basic Electronics Lab	95
Experiment on Intelligent Hardware Applications	95	Analysis and Design of Analog Circuits	90
Principle of Communications (Honor Track)	97	Programming Design and Algorithm	93

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

RESEARCH EXPERIENCE

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

- Independently implemented superposition algorithm for SPAD array without global gates, and interpolation method for irregular sampling grid;
- Joined a collaborative project in developing 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 (RSD);
- Proposed a criterion to explain the selection of virtual illumination function and corresponding wavelength in phasor-field method;
- [Optics Letters Paper under review] Developed a fusing algorithm to improve the phasor-field method when the measurement SNR is extremely low.

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 of massive MIMO, hybrid beamforming and reconfigurable intelligent surface;
- Analyzed the method of designing Reconfigurable Holographic Surface (RHS) by constructing varactor diodes in radiation cells to modulate the amplitude;
- 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