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: **3.772**/ 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

Signal and System (Honor Track)	97	Electrodynamics (B)	95
Electromagnetism	91	Quantum Mechanics (A)	98
Methods of Mathematical Physics	96	Basic Electronics Lab	95
Experiment on Intelligent Hardware Applications	95	Microprocessor and Interface Technology	93
Principle of Communications (Honor Track)	97	Programming Design and Algorithm	93
Analysis and Design of Analog Circuits	90	Advanced Digital Logic Design	89
Machine Learning	90.5	Python Programming and Application	94

Awards and Honors

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

RESEARCH EXPERIENCE

Non-Line-of-Sight (NLOS) Imaging System and Algorithm 1/2021-present

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)
- Reproduced the NLOS reconstruction results using back propagation and Fresnel approximation of RSD
- Optimized the reconstruction results by applying digital preprocessors to open-source datasets
- Planned to build a low-cost version of NLOS system with portable light source and SPAD detector

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 methods to suppress undesired side-lobe

SELECTED COURSE PROJECT

Survey Study of Fourier Transform Infrared (FTIR) Spectroscopy

- Surveyed about the general theory and principle of FT-IR methodology
- Analyzed the measuring process of a FT-IR spectrometer and made a presentation

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