



电子科技大学

## Ziyang Long

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### EDUCATION

University of Glasgow & University of Electronic Science and Technology of China

2018.09

B.Eng in Electronics and Electrical Engineering expected in Jul.2022

Cum.GPA: 3.61/4.00 (Major GPA: 3.79)

IELTS: 7.0

### RESEARCH EXPERIENCE

An image logical operation unit inspired by human retina

2021.04 - 2021.06

Research assistant in Photoelectric Detection and Sensing laboratory, UESTC

Chengdu

- Designed bionic analog logic-gate circuit referring to the human retina
- Eliminated noise in electric currents deriving from the power source
- Tested digital logic to ensure accuracy of image processing

Noninvasive blood glucose detection with flexible two-dimensional materials

2019.07 - Present

Research assistant in Information Materials and Devices team, UESTC

Chengdu

- Realized the analog amplifier and filter of biological current
- Developed a website and an Android application to demonstrate the data using Alibaba cloud server(ACS)
- Established the correlation between the peculiarity of reflected electromagnetic wave(0.5GHz-3GHz) and the concentration of blood glucose by using various data analysis methods with Gaussian Process predominantly involved

### PROJECT EXPERIENCE

Intelligent Tracing Car

2021.03 - 2021.06

Team Design Project and Skills, hardware group leader

- Accessed MicroPython to develop embeded firmware for cars based on a STM32 microcontroller
- Implemented drivers for gyroscope modules MPU6050 and JY901S
- Leveraged photocoupler to realize the isolation of the driving circuit and the control circuit.

A CNN for MNIST Handwritten Digit Classification

2021.03 - 2021.05

Introduction to Deep Learning Course Program

- Built a neural network in the main structure of two convolution layers and two pooling layers by Matlab
- Adopted BP algorithm and SGD algorithm to update the parameters for each layer
- Chose ReLU as activation function in the hidden layers and Softmax as activation function in the output layer

Portable Finger Pulse Monitor

2018.08 - 2019.01

Microelectronic System Course Program

- Transformed analog signals from Pulsesensor into digital signals on a STM32 microcontroller and adopting moving average filter algorithm to diminish the thorns and slight oscillation in signal
- Established interoperability between LCD screen and STM32 using UART protocol

### TEACHING EXPERIENCE

Teaching Assistant, Electronic System Design, University of Glasgow-UESTC

2021.09 - Present

- Conducted tutorial sessions for more than 45 students per week in addition to providing academic guidance which garnered overwhelming positive feedback

- Validated and Reviewed students' project reports

**Teaching Assistant, Power Engineering, University of Glasgow-UESTC**

2021.09 - Present

- Instructed students during lab sessions and checked their experiment results

## PUBLICATIONS

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- Wen Du, Caihong Li, **Ziyang Long**, Yixuan Huang, Lingzhi Luo, Jihua Zou, Jiang Wu, Senior Member, IEEE, "An Image Memory Logic Unit Inspired by Human Retina", IEEE Electron Device Letters.
- Yixuan Huang, **Ziyang Long**, Jihua Zhou, Linzhi Luo, Student Member, IEEE, Xiangyu Zhou, Hezhuang Liu, Weijie He, Kai Shen, Jiang Wu, Senior Member, IEEE, "A glucose sensor based on surface functionalized MXene", IEEE Transactions on Nanotechnology.(under review)

## PATENTS

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- Box glucometer. CN. Patent ZL202130024461.3, filed January 14, 2021, and issued August 31, 2021.
- Photoelectric operation processor with memory function and preparation method. CN. Patent Application 202110740607, filed June 30, 2021, Patent Pending
- A WIFI-based blood glucose meter. CN. Patent Application 202120166412.8, filed January 21, 2021, Patent Pending

## HONORS & AWARDS

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Scholarship for Outstanding Students,Second Prize	2021.10
Provincial silver award in the 7th China International College Students"Internet" Innovation and Competition	2021.09
Pacemaker to Merit Student, UESTC	2020.10
The First Prize in School Venture Contest	2020.11
Outstanding Recruitment Volunteer, UESTC	2019.03

## SKILLS

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- Program Languages:** Python, C++, HTML, CSS, Javascript, Verilog
- Software:** Vivado, Auto CAD, Origin, Cadence, Altium Designer, Sublime3, Matlab, Multisim