



电子科技大学

Ziyang Long

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EDUCATION

University of Glasgow & University of Electronic Science and Technology of China (985)

Sep 2018 - Jul 2022

Electronics and Electrical Engineering Bachelor

Cum.GPA: 3.6/4.0 (Major GPA: 3.64)

IELTS: 7.0

RESEARCH EXPERIENCE

An image logical operation unit inspired by human retina

Apr 2021 - Jun 2021

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

Jul 2019 - Mar 2021

Research assistant 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

A CNN for MNIST Handwritten Digit Classification

Mar 2021 - Jun 2021

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

Aug 2018 - Jan 2019

Microelectronic System Course Program|Glasgow

- Transformed analog signals from Pulsesensor into digital signals by STM32 and adopting moving average filter algorithm to diminish the thorns and slight oscillation in signal
- Counted the number of crests of the signal in a certain period
- Connected STM32 and an LCD screen by UART protocol on the Mbed platform

Publications

- 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 SENSORS JOURNAL.(under review)
- 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.(under review)

Patents

- 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

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

Skills

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