

# Cheng Wan

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## EDUCATION

### Georgia Institute of Technology

Aug. 2022 - Present

- ✓ School of Electrical and Computer Engineering
- ✓ Master of Engineering (in progress), Major in Electrical and Computer Engineering
- ✓ Statistical Machine Learning (A), Advanced Programming Techniques (A)
- ✓ GPA: 4.0/4.0
- ✓ Awards: Merit Student Scholarship

### Nanchang Hangkong University

Sep. 2018 - Jun. 2022

- ✓ College of Information Engineering
- ✓ Bachelor of Engineering, Major in Communication Engineering
- ✓ Signal & Linear System (97/100), Information Theory and Coding (90/100), Object-Oriented Programming (91/100), Matlab Language (92/100), Microwave Technology and Antenna (93/100), Database Principle and Application (94/100), Computer Communication and Networks (92/100)
- ✓ GPA: 3.5/4.0     Rank: Top 5%
- ✓ Awards: Outstanding Scholarship at Nanchang Hangkong University (2020/2021 Academic Year)
- ✓ Language skills: Mandarin (Native), English (TOFEL 108)

## RESEARCH OUTPUT

### Effects of Pulse Transit Time and Pulse Arrival Time on Cuff-less Blood Pressure Estimation: A Comparison Study with Multiple Experimental Interventions, 2023 EMBS Conference (Under Review)

C. Xie, C. Wan, Yishan Wang, Dan Wu\*, and Ye Li, \*Member, IEEE\*

### Cuffless Continuous Blood Pressure Measurement Method Based on Multi-Parameter Feature Fusion [J], Journal of Integration Technology, 2023, 12(2)

X. Jin, C. Wan, C. Xie, C. Liu, D. Wu\*

## PROJECT EXPERIENCE

### SIAT Internship Project of Chinese Academy of Sciences

#### Cuffless Continuous Blood Pressure Prediction Modeling based on Multi-feature Fusion

Project Leader

Sep. 2021 - July. 2022

- Serving as the project leader in the project jointly conducted by the Shenzhen Institutes of Advanced Technology (SIAT) of the Chinese Academy of Science (CAS) and Huawei Company and led the team to sample data such as ECG pulse and blood pressure for more than 30 volunteer testers and extract and fit the signal curves of 294 ultrasound images.
- Conducted in-depth research on more than 60 related literatures in the field of wearable devices and blood pressure measurement to learn the practical applications and algorithmic models for blood pressure detection such as *Random Forests*, *BP Neural Networks*, *RNN*, and *LSTM*. Upon understanding that blood pressure detection is mainly based on the combination of ECG and PPG, multi-parameter physiological signals are introduced to extract blood pressure-related information from three aspects: time domain, frequency domain, and nonlinearity.
- Applying Matlab to correlation analysis of the extracted nearly 300 digital signal sequences to obtain several effective features, and then various machine learning and deep learning models were used for training and cross-sectional comparison of the results to obtain the final continuous blood pressure prediction model accuracy to meet the AAMI standard.

### Image Processing Software Development Laboratory Project, College of Information Engineering

Project Leader

Mar. 2021 - May. 2021

- Followed the tutor to learn machine learning and the basic content of deep learning and conducted computer vision (CV) learning to study target recognition and used the neural network to classify

4000 pieces of images through 50 training epochs, thereby constructing the image recognition network reaching the recognition accuracy of more than 85%.

- Independently took charge of developing five different MFC-based application programs of *Dialog-based Player Configurator*, *Dialog-based Message Teleprompter*, *Single-document-based Streaming Media Manager*, *Single Document View Background Settings*, and *Dialog-based Address Book* during the project.

### **China International College Students 'Internet+' Innovation and Entrepreneurship Competition**

*Project Leader*

May. 2020 - May. 2021

- Led the project COVID-19 Regional Spread Prediction Model Based on Matlab and Collected data on the current stage diagnosis of the epidemic in China, and preliminarily came into contact with various algorithm researches.
- Using the *Multidimensional Meta-Cellular Automata* model and a differential evolutionary algorithm, tens of thousands of magnitudes of data were processed. The innovation lies in using multiple parameters for algorithm fitting and visualization, which can clearly see the evolution of the process before, during and after the outbreak, and successfully design the outbreak and transmission mechanism of the epidemic in Qingshan Lake District, Nanchang.
- Compiled the project results and submitted to the journal "China Science and Technology Talent" (under review) as the first author.

### **The 14<sup>th</sup> College Students' Small Invention, Small Production, Small Creation' Innovation Project**

*Project Member*

Apr. 2019 - May. 2020

- Designed the automatic control system of the window based on an STC8 single-chip microcontroller in the project *Intelligent Control System for Doors and Windows* and was awarded as an *outstanding winner*.
- Designed a set of a system capable of realizing automatic window closing when it rains, or air quality is poor, automatic window opening for ventilation when the weather is good, and intelligent comparison of internal and external environment temperature and humidity through various sensors
- Added a toxic gas detection function, a voice reminder function if the door is not closed when the person leaves the room, an automatic outdoor wind speed detection function, and daybreak and dark automatic opening-closing function for the system.

### **WORKING EXPERIENCE**

*Intern*

**ECCOM Network System Co., Ltd.**

Jul. 2021 - Aug. 2021

- Exposed to after-sales technical field and pre-sales preparation, mastered the software such as 3C Daemon for configuration of server network ports and switch control, and completed the experiment of virtual machine wireless control Aps
- Assigned to project support for CCNA network practice: Dispatched to the network warehouse of Tencent Ecological Science Park in Shenzhen to sort out and configure more than 120 switches and other devices of Tencent customers, empty some configurations to facilitate full use of old resources, check forms and review omissions, etc.
- Learned the preparation of bidding documents, and acquainted with the overall framework of bidding documents and the technical bidding content

### **SKILLS & SPECIALTY**

**Computer skills:** Proficient in Pytorch, LaTeX, Matlab, Python, C/C++ Language, SQL, ADS, HFSS, Maple, Quartus, Keil, Multisim, Proteus, etc.

**Interests:** Performance (self-directed and self-performed New Year's Party of the university), Various ball games, Singing (New Year's Party of the university), E-sports (Intel Cup Shanghai Champion)