# Cheng Yuanyao 程园耀

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## EDUCATIONAL BACKGROUNG

**University of Electronic Science and Technology of China (UESTC, 985)**　　　*Aug, 2021~ present*

School of Information and Communication Engineering

**Degree:** Bachelor of Engineering (BEng)

**Major:** Electronic and Information Engineering

**Weighted Average Mark: 92.17/100**

**Ranking: 2 out of 30** in the class, **6 out of 230** in the grade

### Exchange Experience

**Nanyang Technological University, Singapore**　　　*Jul 11, 2023~ Jul 22, 2023*

**Exchange Programme:** NTU Artificial Intelligence Internship Programme

**Learning Experience**

**Courses:** Machine Vision; Deep-learning Model; Processing & Classification of Medical Images

**Project:** Enhanced Kidney Disease Detection in CT Scans Using EfficientNet with Integrated CBAM Attention Mechanism

**Responsibilities:**

➢ In charge of full-codes writing (including ResNet, MobileNet, EfficientNet, Transformer, etc.);

➢ Integrate deep learning models with attention mechanisms for experimentation  (including CBAM, SAM, CAM, STN, etc.);

## RESEARCH PROJECTS

**ChatGPT-based Blockchain Smart Contract Vulnerability Analysis Project**　　　*Oct, 2023~ present*

**Position:**  Project Member | **Tutor:** *Chen Ting*

**Research Objectives:** Use ChatGPT for preliminary data collection, complete the training of blockchain smart contract vulnerability analysis, and finally realize the automated vulnerability detection of smart contract system.

➢ Participated in ChatGPT data collection and training

➢ Got to know EVM (Ethernet Virtual Machine) and the programme language Solidity through self-learning

➢ Consciously completed the analysis of the reasonableness of the ChatGPT detection code

➢ Processed and trained on the reasonableness of the data

**Paper:** Ting Chen, Qingyuan Liu, Meng Wu, Jiachi Chen, Xi Chen, Renkai Jiang, Yuqiao Yang, Zhangyan Lin, Yuanyao Cheng, "Exploring the Potential of ChatGPT in Detecting Logical Vulnerabilities in Smart Contracts" (on-going)

**Integrated and Federated Algorithms - Based Class Instructional Data**　*Sep, 2022~ Dec, 2023*
**Collection System**

**Position:** Person in Charge | **Tutor:** Wu Chang (Recommender)

**Research Objectives:**

➢ To complete the dynamic collection of student data throughout the courses

➢ To give comprehensive and accurate evaluations of each student and teaching guidance and suggestions to teachers based on machine learning algorithms

**Responsibilities:**

➢ Completed the overall design of the system, and the coordination of the front-end and back-end design, algorithm design and data collection as the leader of the project

➢ Interfaced with counterparts in schools to make promotions of the products to put into use for trial, teaching, collecting feedback

➢ Executed the application for innovation and entrepreneurship projects

➢ Took part in the roadshow

**Achievements:**

Applied for two National Innovation Patents (currently in the substantive examination stage)

➢ **A Data Collection And Analysis System For Higher Education Teaching**, publication No.: CN116308933A, First Inventor

➢ **A blockchain-based educational record and credential system**, publication No.:. CN116362932A, Third Inventor

**Challenging Project in Digital Signal Processing : Acoustic scene** *Sep, 2022~ Dec, 2023*
**classification based on deep learning method**

**Position:** Project Member | **Tutor:** Wu Chang (Recommender)

**Research Objective:** To create a deep learning based acoustic scene classification model to achieve the classification of ten acoustic scenes

**Responsibilities:**

➢ Learned the preprocessing of noisy audio signals datasets. Enhanced the raw audio, generated a spectrogram, and then applied frequency masking and time masking to further enhance the spectrogram.

➢ Converted audio data into images and used deep learning method for prediction.

**Award:** Outstanding Project in the Challenge Course of Digital Signal Processing (**score: 96/100**)

**FPGA-Based Dual Elevator Control System** *Sep, 2022~ Feb, 2023*

**Position:** Person in Charge | **Tutor:** Lin Shuisheng

**Research Objectives:** To write Verilog code and realize the logic for a dual elevator control system using FPGA

**Responsibilities:**

➢ Wrote codes for communication between FPGA and single-chip microcomputer (UART) using Verilog

➢ Made reports and conducted roadshows as the leader of the project

**Award:** Outstanding Project in the Challenge Course of Digital Logic Circuit and System Design (**score: 97/100**)

# EXTRACURRICULAR ACTIVITIES

**National College Students' Art Performance** *Sep, 2023~ Jan, 2024*

Class Choir of UESTC | Position: Leader

**Responsibilities:**

➢ In charge of Chorus, rehearsals and daily management of the choir (including personnel selection, rehearsal management, choral filming and video recording)

➢ Assisted in the training and improvement of the male voices in the high and low voice parts

➢ In charge of the itinerary arrangement and security confirmation

**Award:** won a second-prize at the provincial level in National College Students' Art Performance

**National College Students Three Kinds of Going to the Countryside** *Jul, 2022~ Oct, 2022*
**Activity in Summer Vacation** | Position: Leader of the team

Rural Revitalization Practice Team of School of Information and Communication Engineering, UESTC
**Responsibilities:**
➢ Conducted research and investigations on rural revitalization in the countryside of Cenggong, Guizhou
➢ Held hosting service activities to junior school students in rural areas and conducted summer classes
➢ Made promotions for local lodges and gave advice on further development
Award: Won Outstanding Team in National College Students Three Kinds of Going to the Countryside Activity (the **only** award-winning group in UESTC)

**Innovative Talents Science Training Program**                              *Jan, 2022~ Apr, 2022*
Talent Class of School of Information and Communication Engineering, UESTC (Yi Xiyi Class)
Position: Monitor of the class
Responsibilities:
➢ Organized students to complete a two-year challenge course
➢ Served as an interviewer in talent selection
➢ Organized more than 20 activities including enterprise visits, academic sharing and sports competitions
Awards:
➢ Participated in the Liren Elite Defense and received the honor of "Elite Student" (**only 5** students in the school received the award)
➢ Organized students to defend in the Top Ten Liren Class and received the **highest** award

## HIGHLIGHTS
**Language Proficiency: 7.0** in IELTS (7.0 in listening, 7.5 in reading, 6.0 in writing, 7.0 in speaking)
**Awards and honor:**
➢ A-class Certificate for All-round Development of College Students in Sichuan     *Jun, 2023*
➢ Honorable Mention in 2023 Mathematical Contest in Modeling (COMAP)     *Apr, 2023*
➢ First Prize Award in the 2022 "FLTRP·ETIC Cup" English Public Speaking Contest     *Dec, 2022*
➢ **National Scholarship** (Ministry of Education of the People's Republic of China)     *Oct, 2022*
➢ First Prize in 2022 National English Competition for College Students     *Oct, 2022*

**Certificate:** Pass the English Test for International Communication (Advanced)
**Other Hobbies:** English Speech; Table Tennis