

# ZHITAO CHENG

Mobile: (86)18990199546 | Email: victoryczt@gmail.com | [Personal Website](#)

## EDUCATION

---

**University of Electronic Science and Technology of China (UESTC)** 09/2020-06/2024  
B.S. in Data Science and Big Data Technology, B.Eng. in Computer Science and Technology  
Overall GPA: 3.96/4.0, ranking 1/113  
Related Courses: Mathematical Analysis, Advanced Algebra, Mathematics in Data Science, Data Mining and Big Data Analytics, Artificial Intelligence, Mathematical methods of artificial intelligence

## SELECTED PUBLICATIONS

- 
- [1] Chenyan Jia, **Zhitao Cheng**, Yanlin Leng, Junfeng Wang, Yong Tang. [MPRNet: Multi-scale Pointwise Regression Network for Crowd Counting and Localization](#). *2024 International Conference on Intelligent Computing Singapore*: Springer Nature Singapore, 2024: 180-191.
- [2] Yao Xiao, **Zhitao Cheng**, Shengping Liu, Yicheng Zhang, He Tang, Yong Tang. [PhotoSolver: A Bidirectional Photonic Solver for Systems of Linear Equations](#). *Optics and Lasers in Engineering*, 2024, 183: 108524.
- [3] Yong Tang, Jason Xiong, **Zhitao Cheng**, Yan Zhuang, Kunqi Li, Jingcong Xie, Yi-Cheng Zhang. [Looking into the Market Behaviors through the Lens of Correlations and Eigenvalues: An Investigation on the Chinese and US Markets Using RMT](#). *Entropy*, 2023, 25, 1460.
- [4] Zongyao Zhao, Yong Tang, **Zhitao Cheng**, Yanlin Leng, LiLing Tang. [ABL-TCM: An Abductive Framework for Named Entity Recognition in Traditional Chinese Medicine](#). *IEEE Access*, 2024.
- [5] Yao Xiao, Yang Zhao, Wei Wang, **Zhitao Cheng**, Xizhu Peng, He Tang, Shengping Liu, Yong Tang. [Residual Calibration for High-Precision Optical Neural Networks](#), Under Review, *Optica*, 2024. (Top Journal)
- [6] **Zhitao Cheng**, Yan Zhuang, Xujia Li, Yuyang Zhuge, Yanlin Leng, Qing Wang, Song Su, Jiayu Huang, Yong Tang. [Diagnosis of Cataract of Human-companion Animals using Deep Learning](#). Under Review, *The Veterinary Journal*, 2024.
- [7] Li Wang, **Zhitao Cheng**, Yan Zhuang, Kunqi Li, Fan Li, Song Su, Jian Shu, Jing Chen, Yong Tang. [Early Assessment of Myocardial Injury in Patients with COVID-19 using a Two-Stage Deep Learning Framework Based on Non-contrast Chest CT](#). Under Review, *Journal of Cardiovascular Computed Tomography*, 2024.
- [8] Jiali Wu, **Zhitao Cheng**, Junan Zhou, Kunqi Li, Piao Wang, Yan Zhuang, Jijun Lu, Linru Zhou, Fan Li, Song Su, Yong Tang. [Accurate Identification of Intestinal Ischemic Areas Using Hyperspectral Imaging: A Pilot Study Based on Machine Learning and Deep Learning Models](#). Under Review, *Computers in Biology and Medicine*, 2024.

## RESEARCH

- 
- Light Sailor: An Laser-powered Spacecraft for Interplanetary Travelling (202210614179Y)** 12/2021-10/2022  
[School Project](#) | *Project leader* | *Mentor: Prof. Yong Tang*
- Designed a lightsail spacecraft and utilized reinforcement learning to control its navigation trajectory and attitude
  - Conducted simulation experiment in Python to test the spacecraft's performance
- Foodshot: A Deep Learning-based Intelligent System for Food Recognition** 12/2020-07/2021  
[Entrepreneurial Project](#) | *Major Participant* | *Mentor: Prof. Yong Tang*
- Crawled **2000 food images** using Python and constructed a dish classifier based on **VGG16** and **GoogLeNet**
- Intelligent Healthcare for Beijing 2022 Winter Olympics\*** 10/2020-12/2022  
[Entrepreneurial Project](#) | *Major Participant* | *Mentor: Prof. Yong Tang*
- Constructed a **YOLO and Fast RCNN**-based posture detection model using **62** competition videos of athletes to detect falls and identify potential injuries, assisting in fast and effective medical treatment
  - Achieved an accuracy of **96.77%** for fall detection and **91.94%** for injury classification
- CompreHensive EvALuation of InTrinsic Capacity in CHina StudY (2023YFC3605202)\*** 10/2023-12/2028  
[National Project](#) | *Major Participant* | *Mentor: Prof. Junfeng Wang*
- Research on the establishment and application of the evaluation system based on the aging rule of the elderly (Using time series analysis model (**LSTM**, **Transformer**) and **machine learning**)

## Deep Learning-based Diagnosis of Extra-biliary Duct Cancer Diseases\*\*

10/2021-12/2026

*National Project | Major Participant | Mentor: MD. Jian Su, Prof. Yong Tan*

- Employed **ResNet, DenseNet, and UNet** for image lesion segmentation, disease type classification, and expression classification based on image data from CT and MRI scans and clinical feature data

## Silicon-based Optoelectronic Chip System for Ultra-high-speed Matrix Multiplication\*\*

10/2020-12/2025

*National Project | Major Participant | Mentor: Prof. He Tang, Prof. Yong Tang*

- Researched key technologies and applications for an optoelectronic hybrid AI chip public service platform
- Designed optical neural networks (e.g., Diffractive Deep Neural Networks (D2NN)) using AI algorithms in Python
- Proposed a new D2NN architecture for color image classification, improving the accuracy **from 46.09% to 60.85%** compared to the gray image and traditional structure of D2NN

\* Projects funded by the National Key Research and Development Program of China

\*\* Projects funded by the National Natural Science Foundation of China

## INTERNSHIPS

**Artificial Intelligence Application and Technology Laboratory, UESTC** | *Research Assistant*

06/2024-Present

- Assist in managing the research team, projects, and laboratory operations; guide freshman in the lab
- Conduct research and prepare documentations

**AI Lab, DKWA Technologies, Chengdu, China** | *Research Intern*

09/2023-Present

- Explore large Language Model applications (consultation system, local database with RAG, knowledge graph)

**AI Lab, Futong Technology Co. Ltd, Chengdu, China** | *Intern*

07/2021-09/2022

- Studied Artificial Intelligence in Computer Vision and applications (Video detection, Image classification)

## TEACHING EXPERIENCE

**Nonlinear Dynamics and Advanced Signal Processing Techniques**

09-12/2024

*Instructor: Prof. Ludovico Minati | 15 Sophomores & Juniors | Spring 2024 (24hrs)*

- Provided teaching feedback and organized Q&A sessions

**Artificial Intelligence**

09-12/2022 & 09-12/2023

*Instructor: Dr. Yong Tang | 41 Sophomores | Fall 2022 (32hrs) & Fall 2023 (32hrs)*

- Wrote demo code, guided students in coding example problems, and organized Q&A sessions

**C&C++ Programming Language**

09-12/2022 & 09-12/2023

*Instructor: Dr. Yong Tang | 52 Freshmen for Fall 2022 (48hrs) | 53 freshmen for Fall 2023 (48hrs)*

- Assisted in preparing course materials, explained example projects, and organized Q&A sessions

## SELECTED HONORS & AWARDS

### Scholarships:

2021-2022 National Scholarship in China

10/2022

Excellent Student Scholarship

10/2021 & 10/2022 & 10/2023

### Honors:

Outstanding Graduate of Sichuan Province (Top 3% Nationwide)

07/2024

Honorary Research Student in the School of Mathematical Sciences at UESTC (Top 2 Undergraduates)

06/2024

“Most Outstanding Students” Award Nominee of UESTC (Top 20 Undergraduates)

12/2023

### Awards:

Gold Medal, The 2023 ICPC Asia Hangzhou Regional Contest

12/2023

Gold Medal, The 15<sup>th</sup> Programming Competition for college students in Sichuan Province

06/2023

## SKILLS

**Computer:** Python (PyTorch) (4yrs), C and C++ (7yrs), SQL (2yrs), MATLAB (3yrs), LaTeX (3yrs), 3D Studio Max (2yrs), Adobe Photoshop (2yrs), Adobe Audition (1yr)

**ILETS:** 7.0

**Interests:** Table Tennis; Piano; Animation, Cartoon and Game (ACG)