

# Wenhua Chen

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💻 <https://wenhua-chen.github.io/>

## Education

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### Newcastle University

Master of Science in Computer Science

Newcastle upon Tyne, UK

Jul 2017 - Oct 2018

- Score top 5%, graduate with first-class grade (Distinction)

### Sun Yat-sen University

Bachelor of Engineering in Geological Engineering

Guangzhou, China

Sep 2011 - Jun 2015

- Related Courses: C Programming, Advanced Mathematics(Calculus), Linear Algebra and Probability Theory

## PROFESSIONAL EXPERIENCE

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### Shenzhen Yeahka Technology Co., Ltd.

Senior Algorithm Engineer, AI Tech Dept.

Shenzhen, China

Apr 2020 - Present

#### Live Face Detection - Project Leader

- Developed server-side face-antispoof algorithm and interfaces using Python, built a database used for CNN training
- Optimized mobile-side algorithms based on face key points detection and face action recognition using C++, designed an Android SDK and utilized Java to encapsulate UI interface, camera calls, interaction with the dynamic library, etc.
- Boosted project implementation in all the company's eight APPs, and applied online to Yeahka Cloud (a SaaS platform) for external commercial use

#### Pedestrian Tracking & Action Recognition - Project Leader

- Developed algorithms to extract motion and appearance features for tracking using Kalman filter and Deep neural network
- Achieved action recognition by modeling both temporal and spatial features of the target in continuous frames
- Built multi-process pipeline for real-time video processing

#### Video Editing and Graphic Recommendation System - Project Leader

- Conducted the backend development, utilized Swin-Transformer to improve the picture clarity and beautification, developed key video clip extraction algorithm using TSM
- Utilized FFmpeg to achieve the transformation from picture to video with dynamic effects and video transitions
- Completed text database creation and cleaning, conducted Word2Vec model training and utilized TF-IDF to determine weights
- Achieved that both texts and images support keyword search and recommendation based on content similarity

#### Receipts Identification - Individual Project

- Utilized OCR to quickly identify images and SKU information of receipts, returned the identified information in JSON format to analyze store sales and inventory collation data
- Implemented product positioning by YOLOv5, combined with OpenCV's traditional image algorithm to position text and filter redundant information, and achieved table recognition

### Shanghai Quality Creation Technology Co., Ltd.

Algorithm Engineer, AI Tech Dept.

Shanghai, China

Jan 2019 - Jan 2020

#### AI-assisted Medical Diagnosis - Project Member

- Collaborated with Shanghai Ruijin Hospital and accomplished data cleaning and algorithm development
- Analyzed and conducted AI diagnostic models for various diseases, fulfilled multi-label/multi-class classification, object detection and instance segmentation
- Achieved 97% in recall and 72% in precision of the lung nodules, improved accuracy of the scoliosis to 99%, and approved by the radiologist team of Ruijin Hospital

## Patents

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- *Chen, Wenhua. 2022. Video generation method, system, terminal device and medium. China Patent 202210726814.8, filed June 24, 2022, and issued October 21, 2022.*
- *Chen, Wenhua. 2022. Behavior Recognition Method, Device, Terminal Equipment and Storage Media. China Patent 202210321459.6, filed March 29, 2022, and issued July 19, 2022.*
- *Chen, Wenhua. 2021. Small Software Module for Rapid Face Live Detection Based on Artificial Intelligence Technology and its Implementation Process and Method. China Patent 202110563614.0, filed May 21, 2021, and issued August 24, 2021.*

## SKILLS

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- Programming Languages: Python, C/C++, Java, HTML/CSS/JS, SQL, Shell
- Development Tools: Linux, Git, Bash, VSCode
- Framework and Libraries: Pytorch, OpenCV, Numpy, Flask, Scikit-learn