

YUANG CHEN

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EDUCATION

University of Macau

Macao, China

MSc, Data Science in Precision Medicine

September 2023 - June 2025

- **Major courses:** Data Science Programming, AI in Medicine, Digital Biomedicine, Database and Data Mining, Data visualization, Healthcare Analytics, etc.

Shenzhen University

Guangdong, China

Bachelor of Biological Science

September 2019 - June 2023

- **Major courses:** Bioinformatics, Biostatistics, Biotechnology, etc.

PROJECTS

Kaggle Silver Medalist --- CMI – Detect Behavior with Sensor Data

September 2025

- Engineered a hybrid CNN-GRU architecture in PyTorch to model heterogeneous sensor streams from wrist-worn devices.
- Employ K-fold cross-validation to enhance model generalization capabilities and mitigate overfitting risks.
- Achieved Macro-F1 score of 0.861 on Private Leaderboard. Placed 106th of 2657 teams. **Competition Silver Medalist.**

Lung Cancer Single-Cell RNA-seq Analysis (Haplox Biotech.)

October 2025

- Establish a single-cell RNA-seq data analysis workflow using the Scanpy and scvi-tools to identify 12 lung cancer subpopulations by UMAP downscaling.
- Developed a cell type annotation process and integrated PanglaoDB database for automated cell subtype identification.

ICU Big Data Research

March 2025 - Present

- Built a MIMIC-III database ETL process to extract 72 clinical indicators from 10,000+ ICU patients using PostgreSQL.
- Using PostgreSQL、R to clean ICU Critical Care Medicine Data and obtain clinical indicators of the patient as features.
- Designed a reward function mechanism to build a reinforcement learning framework (PyTorch) to optimise sepsis treatment plan decision-making.

Development of an ECG-Based Community Screening Tool for Stage B Heart Failure

January 2024 - April 2025

- Developed OpenCV-based ECG signal preprocessing process to achieve automatic detection of ECG signal wave clusters (98.2% accuracy), providing high-quality time series data for subsequent analysis.
- Designed a wavelet transform-based feature extraction algorithm to significantly improve the robustness of the model on low-quality ECG data in the community.

Heart Disease Based on Machine Learning

November 2024 - December 2024

- Developed an automated data cleaning process to process 400,000 pieces of electronic medical record data and effectively solved the category imbalance problem by using SMOTE technology.
- Compared and evaluated the performance of five algorithms, including LightGBM, the final integrated model achieves an F1-score of 0.87 in the cardiovascular disease prediction task.
- Optimised the training process and improved the model iteration efficiency by 40% through multi-process parallel computing.

PROFESSIONAL EXPERIENCE

Haplox Biotechnology

August 2025 - Now

Management Trainee (Oncology Academic Department / Bioinformatics Center)

Mentor: Shifu Chen

- Serve as a Research Assistant in the Oncology Academic Department. Responsible for analyzing single-cell data from clinical patients and conducting research on related paper topics.

- Responsible for research on clinical oncology pathology slides, building a Predictive Biomarker for Tumor Vascularity Using Inference Models.
- Patent Title: A Method for Predicting Prognosis in Clear Cell Renal Cell Carcinoma Based on Vascular Segmentation and Vascular Feature Maps

Bao'an Traditional Chinese Medicine Hospital

March 2025 - June 2025

Research Assistant

- Assisted in carrying out the research project of Chinese medicine pharmacology, responsible for the establishment of experimental animal models and sample collection, and completed the standardization of more than 300 samples in total.
- Assisted in ICU database establishing and data cleansing. Responsible for the data mining and patient data analysis.

RuiGuang Medical Equipment Company, Shenzhen

February 2021 - April 2021

Intern Biotechnology Technician

- Took the lead in the operation, maintenance and quality control of the automatic biochemical analyzer, and completed daily calibration and quality control tests in strict accordance with SOPs to ensure accurate and reliable test results.
- Participated in the performance validation experiments of in vitro diagnostic kits, which increased the detection sensitivity by 20% through optimizing the parameters of the reaction system, providing key experimental data for product registration.

RESEARCH INTEREST

- Medical Big Data Analysis
- Machine Learning
- Single-cell data analysis in oncology and processing of tumor pathology sections

PUBLICATIONS

- *Prevalence of Diabetes and Related Factors of Diabetes Among Adult Pima Indian Women. (EI)*
- *Study on the Central Neural Pathways Connecting the Brain and Peripheral Acupoints Using Neural Tracers. CNS Neuroscience & Therapeutics. (SCI, IF 5.0-Q1)*

HONORS AND AWARDS

- Kaggle Competition **Silver Medalist** in CMI – Detect Behavior with Sensor Data
- **First Prize** of Shenzhen Nanshan Cup Basketball Tournament
- **First Prize** of Guangdong University Basketball Association
- 2019 WTA Finals Shenzhen **Outstanding Volunteer**
- 2023 YAO MING Foundation charity basketball match **Outstanding Volunteer**
- Shenzhen University Volunteer Association Administrative Department Annual **Outstanding Volunteer**

SKILLS AND CERTIFICATES

- IELTS (2023.08): 6.5 overall (Listening 6.5, Reading 7.5, Writing 6.0, Speaking 6.0)
- Total score of 480 in CET-6
- Proficiency in using Python for data analysis (cleaning, mining) and data visualization. Proficient in using Python to address machine learning and deep learning problems (PyTorch).
- Proficient in using R (Seurat) and Python (Scanpy) for bioinformatics single-cell analysis and annotation of specific cell subpopulations.
- Proficient in using MySQL databases to establish and extract clinical big data, screening specific cohort populations based on patient clinical indicators for data analysis and machine learning.
- Proficient in using Adobe Illustrator, Tableau, and other software for scientific visualization.
- Proficient in Zotero and Endnote to read and manage literature.

PASSIONS OUTSIDE RESEARCH

- **Basketball:** Played for the school team from middle school through college. Won the first city championship for the middle school.

- **Good at Tennis, Skiing, Fencing.**