Cheng CHEN

Email: cheng.chen25@imperial.ac.uk
Phone： +44 735 220 5291
Add: London, SW7 2AZ, United Kingdom
Github: https://github.com/ChefsSalad
Personal Hub: https://chefssalad.github.io/

EDUCATION

Imperial College London (IC) | London, UK   09/2025-09/2026 (Expected)

M.S., Applied Computational Science and Engineering

Key Courses: Applied Computation, Data Science and Machine Learning, Modelling and Numerical Methods, Inversion and Optimization, Parallel Programming, etc.

Donghua University (DHU) │ Shanghai, China   09/2021-06/2025

B.S., Data Science and Big Data Technology   **GPA:** 90.1/100   Shanghai, China

Key Courses: Deep Learning, Algorithom and Data Structures, Calculus, Linear Algebra, Probability and Mathematical Statistics, etc.

INTERNSHIP

Artificial Intelligence Quantitative Research Lab │ Shanghai, China   02/2025-08/2025

AI Intern, Research Leader

- Developed and validated a Multi-Agent Financial Model, enabling specialized agents to adaptively model distinct local signals within complex, high-dimensional factor sets exhibiting non-stationary effectiveness
- Engineered a Cross-Source Attention Module utilizing Query-Key-Value interactions to fuse heterogeneous data streams (news, search behavior, social media), allowing the model to dynamically weight and aggregate information across sources
- Developed AI models for automated recognition of patterns derived from classical financial theories (e.g., Wave Theory) for analysis and time series forecasting
- Implemented loss function design and validation, supporting quantitative strategy optimization
- Performed financial semantic quantification for sector classification, topic modeling and sentiment analysis on multi-source text
- Led the development and high-level encapsulation of a Multi-Agent Framework, data Pipeline, visualization, and backtesting system, creating unified, modular interfaces that significantly accelerated the strategy iteration speed from concept to live trading
- Utilized LaTeX for academic writing and document preparation

Institute of Computing Technology, Chinese Academy of Science │ Beijing, China   08/2024-01/2025

AI Intern, Research Assistant

- Contributed deeply to the training and fine-tuning of Visual-Language Models (VLM), successfully deploying features such as Image-Text Description, High-Precision Object Detection, and Multi-Turn Visual Q&A in multiple systems
- Utilized CLIP and Multi-Classification Models to achieve Cross-Domain Matching and Label Association for physical objects across multi-source, multi-resolution remote sensing images, significantly improving data utilization efficiency
- Optimized Super-Resolution Imaging Technology, achieving multi-dimensional ultra-heterogeneous image alignment and denoising for multi-spectral low-resolution images
- Developed an End-to-End system integrating Edge Enhancement, Super-Resolution Generative Adversarial Networks (SR-GANs), and downstream tasks (Object Detection, Segmentation), achieving significant improvements in terminal performance
- Designed and experimented with advanced fusion modules for Multi-Source Remote Sensing Data Streams
- Applied traditional computer image processing algorithms for image pre/post-processing and feature enhancement

RESEARCH EXPERIENCE

Dual-Stream Visual Enhanced 3D Image Segmentation Algorithm Mechanisms │ Research Leader   08/2023-12/2023

1st Place in Model Metrics in Shanghai AI Lab DIMTAIC 2023 Segmentation Competition

Invited Participant at the **2023 Health China Sinan Summit**

- Proposed a novel visual enhancement perception mechanism that collaboratively models long-range global pixel dependencies and multi-scale local texture information, introducing a dual-branch co-attention mechanism for adaptive information scheduling to boost feature representation across different scales in medical images.
- Introduced an improved 2.5D data structure based on cross-sectional stacking and a channel attention mechanism to reinforce the acquisition and weighting of information along the longitudinal (Z) dimension, achieving lightweight, high-semantic spatial expression while significantly reducing computational cost

Multi-modal Solution: Deepfake Detection and the Source Identification   07/2023-10/2023

Supervisor: Prof. David Woodruff, CMU School of Computer Science

- Co-developed a Multi-Modal Deepfake Detection and Identity Authentication Framework, integrating a Cross-Modal Attention Mechanism, Face Recognition, Audio Feature Engineering, and Physical Anomaly Features
- Achieved a significant enhancement in detection accuracy and system robustness against high-fidelity deepfakes by deeply integrating visual, audio, and text features

SELECTED PROJECTS

Online Education Big Data Analysis Platform with Integrated Specialized LLM │ Group Leader   02/2024-05/2024

Award: National Second Prize in the Chinese Collegiate Computing Competition (4C) and **First Prize** in the Shanghai Collegiate Application Technology Competition (Enterprise Cooperation Track).

- Developed a Text2SQL Large Model to convert natural language queries into structured SQL for querying large-scale educational data, enabling real-time visualization and reporting
- Implemented a Retrieval-Augmented Generation (RAG) system using OpenAI Whisper and a vector database for classroom content, enhancing model reliability and mitigating hallucinations by returning verifiable reference paragraphs
- Integrated, trained, and deployed a ChatGLM3-6B large language model as a conversational assistant for students and teachers
- Leveraged Hadoop and Spark for large-scale data processing and aggregation, enhancing the educational institution's real-time monitoring and resource allocation capabilities

Automatic Annotation System for Cervical Liquid-based Pathology Images │ Group Leader   03/2023-06/2024

Awarded: National-Level project in the Undergraduate Innovation and Entrepreneurship Program

- Developed a implemented cervical cell detection using Deformable Convolution for irregular contour feature extraction and a Spatial Attention Mechanism to enhance feature representation in a single domain
- Applied LORA fine-tuning to a LLaMA model (after Chinese vocabulary expansion and general text pre-training) using Chinese and English medical datasets, and deployed the medical assistant to a website
- Integrated Image-Level Domain Adaptation Networks (DAN) to align feature distributions across source and target domains through adversarial learning, solving the domain shift problem between different hospitals

3D Gaussian Splatting for Visual Computing   02/2024-05/2023

- Implemented the 3D Gaussian Splatting (3DGS) algorithm for applications such as novel view synthesis, SLAM, and pose estimation
- Developed a 3D simulated physical engine for object collision

PROFESSIONAL SKILLS

Programming: Python, JAVA, C++   **Big Data Technologies**: Hadoop, Spark
Database: Dameng Assistant Engineer (DAE)   **Other:** Linux, Docker, LaTeX, Git, CI/CD