Yinda Chen

cyd0806@mail.ustc.edu.cn | linkedin.com/in/ydchen0806 | github.com/ydchen0806

Education

University of Science and Technology of China — Hefei, China
Ph.D. in Information and Communication Engineering — *2024 – 2027*

University of Science and Technology of China — Hefei, China
Master of Computer Science and Technology — *2022 – 2025*

Xiamen University — Xiamen, China
Bachelor of Environmental Science & Engineering and Economics (double degree) — *2018 – 2022*

Experience

Research Assistant — August 2019 – August 2020
South China Botanical Garden, Chinese Academy of Sciences (CAS) — *China*

- Assisted researcher Zhanfeng Liu in conducting research related to soil and climate, and won the first prize for the research report.

Research Assistant — December 2021 – July 2022
The Wang Yanan Institute for Studies in Economics (WISE) — *California*

- Assisted Associate Professor Jiong Zhu in conducting research on spatial economics, mainly responsible for using ArcGIS to extract geographical location information.

Research Intern — September 2023 – February 2024
301 Hospital (People's Liberation Army General Hospital) — *Beijing*

- Collaborated with Academician Qionghai Dai's team on efficient data compression research and submitted a paper to NeurIPS.

Research Intern — November 2022 – August 2023
Imperial College London (remote) — *London*

- Collaborated with Prof. Rossella Arcucci on multimodal pretraining research and submitted a paper to JBHI.

Projects

Large-Scale Self-Supervised Pretraining — May 2022 – December 2023

- **Self-supervised neuron segmentation with multi-agent reinforcement learning, IJCAI 23**
- Improved MAE masking strategy based on reinforcement learning methods, automatically selecting masking rate and masking scheme.
- **Learning multiscale consistency for self-supervised electron microscopy instance segmentation, ICASSP 24**
- Achieved high-performance pretraining strategy based on multiscale feature contrast learning and feature reconstruction.
- **Generative Text-Guided 3D Vision-Language Pretraining for Unified Medical Image Segmentation, Submit to JBHI**
- Conducted multimodal image-text contrast learning pretraining based on large language model-generated image descriptions.
- **Generative Text-Guided 3D Vision-Language Pretraining for Unified Medical Image Segmentation, Submit to NeurIPS 24**
- Proposed pretraining method combining image autoregression and mamba framework, demonstrating advantages in long sequences and low computational cost, showcasing good scaling laws, and providing corresponding theoretical proof.

Large-Scale Data Compression and Information Retrieval — August 2023 – Present

- **UniCompress: Enhancing Multi-Data Medical Image Compression with Knowledge Distillation, Submit to NeurIPS 24**
- Achieved higher compression performance through multimodal knowledge priors and implicit neural network compression of multiple data, based on knowledge distillation.

- **BIMCV-R: A Landmark Dataset for 3D CT Text-Image Retrieval, MICCAI 24**
- Constructed the first open-source 3D CT image-text pair and implemented efficient image-text information retrieval and keyword search.

Large Model Pretraining September 2023 – Present

- **Image Encoding, Intra-frame Prediction Large Model**
- Primarily responsible for pretraining within the team, experienced in large-scale cluster pretraining with 64 A40s, proficient in DDP, DeepSpeed, Colossal-AI and other large model frameworks.
- **Medical Image Segmentation, Neuron Segmentation Large Model**
- Developed advanced segmentation models for diverse medical imaging applications, focusing on neuron segmentation.

Honors and Awards

- American Mathematical Contest in Modeling, O Award, INFORMS Named Award (individually completed). **May 2024**
- Graduate National Scholarship, Top 1%. **December 2022**
- Xiamen University Academic Star, Only Undergraduate Winner. **December 2021**
- "Jingrun Cup" Mathematics Competition Professional Group, First Place at Xiamen University. **September 2021**
- "Internet+" Contest, Gold Medal in Fujian Province. **August 2021**
- National Undergraduate Mathematics Competition Non-Professional Group Final, National Second Prize. **May 2021**
- "Challenge Cup" National Undergraduate Extracurricular Academic Science and Technology Works Competition, First Prize in Fujian Province. **May 2021**
- National Undergraduate Mathematics Competition Non-Professional Group, First Place in Fujian Province. **November 2020**

Technical Skills

Programming Languages: Python, MATLAB, LaTeX, C, C++, Java
Frameworks: TensorFlow, PyTorch, FastAPI, Flask
Developer Tools: Git, Docker, DDP, DeepSpeed, Colossal-AI
Cloud Platforms: Google Cloud Platform, AWS
Language Proficiency: TOEFL (110), GRE (328)