Yang Zhongyu

+86 13437555149 yangzhy21@lzu.edu.cn Person Website

Google Scholar 0009-0003-0190-8256 GitHub

Shenzhen, China

Objective

My long-term research goal is to develop intelligent machines that can actively perceive, analyze, and interpret human states, behaviors, and underlying motivations in dynamic scenes.

Education

- **Lanzhou University (Project 985)** *Sept. 2021 - June.2025 (Expected)*
  B.S. in Mathematics and Applied Mathematics (Main major) Lanzhou, China
  - Relevant courses: Mathematical Analysis, Advanced Algebra, C++ Programming, Probability Theory, Ordinary Differential Equations, Numerical Analysis, Microeconomics, Differential Geometry, Functional Analysis, etc.
- **The Chinese University of Hongkong, Shenzhen** *Mar. 2024 - Present*
  Research Assistant in Laboratory for Intelligent Autonomous Systems (LIAS) at School of Data Science Shenzhen, China
  - Advisor: Zhang Ruimao

Patents and Publications

J=Journal, P=Patent, S=Software Copyright, R=Under Review

[J.1] **Zhongyu Yang**, Ziyue Xue(2023) **Analysis and Forecast of GDP of Gansu Province based on ARIMA Model.**. *Chinese Market*, Volume 2023-06, March 2023, Pages 1-4

[J.2] Mengying Su, **Zhongyu Yang***, Shujaat Abbas, et al(2023) **Toward Enhancing Environment Quality in OECD Countries: Role of Municipal Waste, Renewable Energy, Environment Innovation and Environmental Policy.** *Renewable energy*, Volume 211, July 2023, Pages 975-984

[J.3] Zhichao Yu, **Zhongyu Yang***, et al.(2024) **Green Effect of Energy Transition Policy: A quasi-natural Experiment Based on New Energy Demonstration Cities**. *Finance Research Letters*, Volume 66, August 2024, 105669

[P.1] **Zhongyu Yang**.**A mathematics teaching system based on virtual reality.** (CN116312091A)

[S.1] **Zhongyu Yang**. **Green and Low-carbon Integrated Monitoring Software.** (2023SR1355487)

[S.2] **Zhongyu Yang**. **Fully automatic spatial sound field environment perception system** (2024SR0538446)

[R.1] **Zhongyu Yang**, Zuhao Yang ,Yifang Yuan, et al. (2024). **ReChar: Revitalising Characters with Decoupled Content and Style Injection**. Manuscript was under reviewed for publication in *AAAI 2025*.

Projects

- **Multi-Character Story to Motion with Decoupled Content and Style Injection** *June. 2024 - Present*
  Supervisor: Zhang Ruimao, CUHKSZ
  - Generating controlled, infinitely long character actions and trajectories from long textual descriptions by combining a large language model, text-driven action retrieval, and an asymptotic mask transformer.
- **FPGA-Based AI Doctor: Deep Learning-Based Clinical Target Delineation for Cervical Cancer** *Mar. 2024 - Present*
  National College Student Innovation and Entrepreneurship Training Program
  - Enhanced the traditional U-Net architecture and leveraged the parallel processing capabilities of FPGA to achieve remarkable advancements to identify subtle features in medical images.
- **UNet-Centric MambaMorph: A Comprehensive Visual Mamba Framework Enhanced with Cross-Scan and Semi-Supervised Learning for Medical Segmentation** *Jan. 2024 - Present*
  Fundamental Research Funds for Central Universities Research Capacity Improvement Project
  - Integrated UNet and Mamba architectures to enhance the global context understanding of medical images and optimize segmentation accuracy through a novel Cross-Scan module.
- **A Generative Model for Revitalising Characters with Decoupled Content and Style Injection** *May. 2024 - Present*
  Supervisor: Yifan Yuan, Heriot-Watt University,UK
  - Drawing inspiration from the pictogram subset of Chinese characters, we introduce a controllable framework designed to create novel artworks that seamlessly incorporate user-defined elements and stylistic preferences into Chinese characters.

- **Tropical Linear Representation ofInvolute Chinese Monoids** *Mar. 2023 - May. 2024*
  National College Student Innovation and Entrepreneurship Training Program
  ◦ Introduced free monoids and rewriting systems as well as the tropical linear representation, and defined the tropical linear representation for the Chinese monoids of involution operations.
- **Global Urban Sustainable Development Strategies and Empirical Research** *May. 2022 - Present*
  Ural Federal University Program of Development within the Priority-2030 Program
  ◦ Carried out pattern recognition and predictive analysis on the key influencing factors of urban green development utilizing machine learning and data mining to accurately capture the long-term equilibrium relationship and short-term dynamic adjustment mechanism of urban green policies.

Honors and Awards

◦ International College Mathematical Modeling Competition Meritorious Winner (2023) **(Top 6%)**

◦ Honorable Award of the American Collegiate Mathematical Contest in Modeling (MCM) (2023) **(Top 25%)**

◦ Provincial-level Gold Medal in China College Students' 'Internet+' Innovation and Entrepreneurship Competition (2023) **(Top 1%)**

◦ Best hardware Winner, Best Target Molecule Nominees & Winner, Best Genome Evolutionary Outcomes Nominees & Winner in International Directed Evolution Competition (IDEC 2023) (2023) **(TOP 1%)**

◦ National First Prize in 2022 National College Student Data Analysis Competition (2022) **(Top 3%)**

◦ National First Prize in the National 2022 Second China University Big Data Challenge (2022) **(Top 8%)**

Experience

- **iFLYTEK Co., Ltd.** *June 2023 - Aug. 2023*
  Data Operation Intern of Smart Home Department Lanzhou, China
  ◦ Built statistic models based on the previous website user data to perform data analysis to enhanced revenue growth.

Skills

- **Programming Languages:** Python,R,Stata,Latex
- **Languages:** Mandarin (native), Cantonese (native), English (fluent)