Pengyu CHEN

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ABOUT ME

Have an interdisciplinary background in computer and spatial analysis, and have practical development experience in various programming languages and skills. Rich social experience and strong communication skills, adapt to work in a variety of environments. Both scientific research ability and computer programming ability have been well cultivated.

EDUCATION

Wuhan University of Technology

Geographic Information Science Undergraduate *2020 – 2024*

INTERNSHIP & RESEARCH EXPERIENCES

Visiting student & Research Assistant, Wuhan University *July 2023 –*

- Training the **YOLO**-based object detection algorithm. Deploy the model compression to the **K210 microcontroller**.
- Landed application: the model detects Tibetan brown bears, the K210 drives the water pump, and the bear spray is used to drive away the Tibetan brown bears.
- Currently have a Chinese core journal in submission.
- Supervisor: Prof. Teng Fei

Development team leader, GISinfo (Subprojects under GISphere) *February 2022 –*

- Use the **Django** framework of Python to write login and registration APIs, adopt the interface format of **Django REST Framework**, and connect to the **MySQL** database of the project team. Use **Vue** to build the front-end.
- Responsible for the management of the user demand pool, and the advancement of the back-end related work.
- Website: gisphere.info
- Supervisors: Yikang Wang, Dr. Yuhao Kang

ISUI (Urban Informatics) Website Operations Volunteer *February 2023 – July 2023*

- Backend built with **php**; frontend built with **VUE**. Hosting site based on **WordPress**.
- Built an automated Email delivery system; Built a payment and receipt system.
- Website: isocui.org
- Supervisors: Dr. Rui Cao, Prof. Xintao Liu

Research Intern, Clemson University *September 2022 – January 2023*

- Data processing related work: perform appropriate Data Clean on the data in literature, GitHub or other websites, use **MatLab** to perform corresponding calculations, and use its plug-ins to generate fitting curves.
- Use **Python** for data processing, draw the relationship curve between population flux and distance, and the relationship curve between population flux and social indicators.
- Write the thesis and make thematic maps. Currently, the second paper is in the process of submission.
- Supervisor: Dr. Fan Chao

Algorithm Intern, XCMG Road Machinery Division *July 2022 – February 2022*

- Use the software provided by **Leica** to make digital roads, and use **ArcGIS** to present the results on map.
- For actual operation, use the software **3D-office** to make horizontal alignment, organize curve fitting algorithms, and make appropriate modifications to related algorithms on the basis of reality.
- Supervisor: Bowen WU

Independent Innovation Project of Wuhan University of Technology *July 2022 – October 2023*

- Related work is to use **CNN** to identify thermal power plants, and use neural network model to predict carbon emissions. It is currently in the research stage.
- Supervisor: Prof. Wei Cui

AWARDS

- **2021 Huazhong Cup Mathematical Modeling Competition**
  Provincial Third Prize
- **MathorCup Modeling Competition**
  National Third Prize
- **2022 Huazhong Cup Mathematical Modeling Competition**
  Provincial Second Prize
- **Wuhan University of Technology Freshman Mathematical Modeling Contest**
  School Level Third Price

ASSOCIATION WORK

- **President of GIS Association of Wuhan University of Technology**
  June 2022 – June 2023 Supervisor: Prof. Ming Zhang
- **Director of Technology of GIS Association of Wuhan University of Technology**
  June 2021 – June 2022 Supervisor: Prof. Ming Zhang

ADDITION

- Programming languages: Python; C# (mainly used for Unity scripts); JAVA
- Software : MySQL; Unity; ArcGIS; QGIS; MatLab

PUBLICATION

1. Ruixiang Cheng, Xinyu Wang, **Pengyu Chen**, Jiaxin Liu. Multi-Agent Path Optimization Based on STA* Algorithm. Conference: ICITEE 2022: 5th International Conference on Information Technologies and Electrical Engineering
2. **Pengyu Chen**, Tengyuan Liang, Zibin Wu. Impacts of Ethiopia Dam on Vegetation and Water and Ecological Countermeasures. IOP Conference Series Earth and Environmental Science.