Yizhu Jin Email : 19374316@buaa.edu.cn
RacerK.github.io

Education

Beihang University Beijing, China
- *Bachelor of Science in Robotics Engineering (automation)* *Sep. 2019 - Present*
  - **Major Class GPA**: 3.75/4.00
  - **Ranking**: top 10%

Publications

- **Jin, Y. Research on LightGBM Default Prediction Algorithm Based on the Slice Sampling Process.** CSTMM, 2022.
- Xu, L., Li, Y., **Jin, Y. Dual Encoder-based Frequency Attention and Global Axial Transformer network.** in submission.
- **Jin, Y.***, Chen, J.*, Hu, C., Tian, F. **LFP-Net: Lightweight Feature-interaction Dehazing Network for Real-time Vision Tasks.** in submission.

  * Equal Contribution

Research Experiences

LFP-Net: Lightweight Feature-interaction Dehazing Network for Real-time Vision Tasks
Advisor : Prof. Kun Hu *Aug. 2022 - Nov. 2022*
- Proposed a novel architecture for multi-level feature extraction, interaction and representation based on ASM model.
- Decreased the time cost by nearly 8× compared to SOTA and increased the *mAP@0.5* by 4.73% for object detection.
- Achieved high interpretability with theoretical analysis, ablation experiments and visualization results.

Dual Encoder-based Frequency Attention and Global Axial Transformer network
Advisor : Prof. Yang Li *Nov. 2021 - Jun. 2022*
- Proposed a DCT-based Multiband Frequency Attention Module for dual-path feature extraction in the encoder.
- Utilized the Gated Axial-Attention Transformer to construct long-distant relevant global features for discrimination.
- Achieved an average accuracy of 97.41%, AUC score of 0.9887 on four datasets, outperforming SOTA methods.

Doctor-friendly Diagnosis System Based on Retinal Vessel Segmentation Algorithm
Advisor : Prof. Yang Li *Jan. 2021 - Mar. 2022*
- Built a website for doctors to upload the original fundus images and get segmentation references online.
- Developed online query and remote consultation functions as well as dynamic tracking for patients' conditions.
- Deployed program in China's most prestigious Ophthalmology department at Tongren Hospital.

Slice-Sampling: An Approximate Equivalence to Integrated Learning for Dual Forecast
Advisor : Prof. Jingyuan Wang, Prof. Shufan Ji *Oct. 2021 - Feb. 2022*
- Simplified the dual forecast problem by retraining on a sliced dataset based on AUC optimization.
- Designed a heuristic Slice Sampling Algorithm to fine-tune the incorrectly sorted positive-negative sample pairs.
- Analyzed the similarities between multi-model-based Integrated Learning and single-model-based proposed method.

Resource Allocation Optimization Against Drought Based on Genetic Algorithm
Advisor : Prof. Lei Wang *Feb. 2022 - Feb. 2022*
- Applied Least Squares Fitting and Infinitesimal Calculus to fit the integrated general coefficient.
- Improved the fitness function of GA by introducing a key factor as a divisor to guide the optimizing process.
- Won Meritorious Prize (top 7%) in U.S. national Mathematical Modeling Competition.

Correlation Imaging Based on Global Linear Equivalence and Transformation
Advisor : Prof. Wenling Wang *Mar. 2021 - Aug. 2021*
- Numerically transformed the light intensity to grayscale to simplify the sophisticated light path.
- Introduced the global linear scattering coefficient in the calculating process dynamically for real application.
- Won the outstanding prize (top 1%) in the Fundamental Physics Experiment competition in BUAA, 2021.

Work Experience

Beijing GalaxySpace Beijing, China

- *Research Assistant, Remote Sensing Image Processing on Cloud Detection and Dehazing* *Jul. 2022 - Present*

Awards and Honors

Outstanding Performance on Study Scholarship **First Prize** (top 8%), *BUAA* Sep. 2020-2022

Outstanding Performance on Academic Competition Scholarship **Grand Prize** (top 3%), *BUAA* Sep. 2021 & 2022

Remarkable Social Practice Experience **First Prize**, *BUAA* Feb. 2022

Honor Student of Fengru Academy, *BUAA* Sep. 2020

Coding

- **Primary Languages**: C, Python, Java
- **Others**: C++, Matlab