Bi Ligong

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bijiw515 bijiw515

Education

Guilin University of Electronic Technology Sep 2022 - Jun 2026

Bachelor of Engineering in Intelligent Science and Technology
GPA: 3.3 / 4.0
Ranking: 20 / 102
Relevant Courses: Data Structures & Algorithms (85/100), Object-Oriented Programming (91/100), Optimization Methods (89/100), etc.

Research Experience

Summer Research Program, University College Cork) Cork, Ireland
Remote Research Intern Jul 2024 - Sep 2024

- Enhanced 3DGS via MVS integration (MVSGS), utilizing denser point clouds for superior reconstruction quality and robustness compared to sparse-input 3DGS methods, improving overall fidelity.
- Implemented novel density optimization strategies, including adaptive filtering and cloning/splitting, effectively balancing reconstruction fidelity gains (up to 3dB PSNR increase) with computational efficiency.
- Evaluated MVSGS on benchmarks, proving significant performance boosts, especially >16dB PSNR gains in sparse views, and general ĩ.4-2.5dB improvements over baseline 3DGS.

Key lab of Kexin software (Guilin University of Electronic Technology) Guangxi, China
Core Member Apr 2024 - Present

- Conducted research on highway traffic safety assessment (using Python and SQL) to analyze accident records and identify risk factors through association rule mining and social network analysis.
- Developed a predictive model utilizing the CLM-miner algorithm, achieving over 80% accuracy in estimating accident severity under various conditions.
- Designed and implemented an intuitive tool with data visualization techniques (using matplotlib), to facilitate rapid accident response and support traffic safety decision-making.

Business AI Lab (Nanyang Technological University) Singapore
Undergraduate Research Intern Jan 2024 - Feb 2024

- Developed a WCNN and CAM-based model to optimize robot path planning, achieving a 3% improvement in accuracy and greater adaptability compared to conventional CNN and GAN approaches.
- Implemented a novel optimization algorithm with channel attention mechanism, to balance the trade-off between model accuracy and adaptability in dynamic environments.
- Evaluated the model's superior performance using IGD and HV metrics, and visualized Pareto front results to demonstrate the effectiveness of multi-objective optimization.

Publications

Fei T*. **Bi L***, Gao J*. et al. MVSGS: Gaussian splatting radiation field enhancement using multi-view stereo. Complex & Intelligent Systems**(JCR Q2)**. (*These authors contributed equally to this work) Dec 2024

10.1007/s40747-024-01691-x

Bi L. Multi-objective Optimization of Path Planning based on WCNN and Channel Attention Mechanism. 2024 IEEE 18th International Conference on Anti-counterfeiting, Security, and Identification (ASID) Aug 2024

10.1109/ASID63618.2024.10839728

Projects

Gitlet: Distributed Version Control Systems

github.com/bijiw515/sp21-s1234/tree/main/proj2

- Developed a lightweight version control system in Java, replicating core Git functionalities such as committing, branching, merging, and version tracking.
- Gained hands-on experience with distributed version control concepts and implemented custom data structures to manage file history and state transitions.
- **Tools used:** Java, Python, Git

Awards & Honors

- **Second prize**, Excellent Student of Academic Performance, Guilin University of Electronic Technology (2023-2024)
- **Third Prize**, National College Student English Translation Competition of the 3rd Foreign Language Award (2023)

Skills & Languages

Programming Languages: Python, C, Java, SQL, Scheme

Python Packages: NumPy, PyTorch, scikit-learn, pandas, matplotlib

Tools: VSCode, Anaconda, Linux Shell, Git, Google Colab, Jupyter Notebook, IntelliJ IDEA, Pycharm

Languages: Mandarin (Native), Mongolian (Native), English (CET-6: 470 Toeic: 830), Japanese (N1)