Rui WANG

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EDUCATION

Tsinghua University, Beijing, China   Sept.2019-June 2023
Bachelor of Engineering in Computer Science and Technology

- Awards: The Scholarship of Tsinghua Academy Class(2019-2022); The Scholarship for freshmen of Tsinghua University
- Relevant Coursework: Numerical Analysis, Machine learning, Quantum Computer Science, Calculus A, Abstract Algebra

PROFESSIONAL EXPERIENCE

Chang Guang Satellite Technology Co., Ltd   May 2024- Aug 2024

- Led the preliminary screening of satellite-captured images, establishing a TIFF dataset with 2800 images classified by color aberration
- Applied the ResNet model to filter and classify images by color aberration, integrating them into training and testing datasets with about 85% accuracy in identifying aberrations.

Silexon AI Technology Co., Ltd.   Feb 2022- Aug 2022
Algorithm Development Intern

- Designed and implemented Gensim and word2vec models to predict potential drug target applications.
- Applied contextual associations within published papers to construct word embeddings, extracting key sections of the papers and transforming them into vectors.
- Labeled vectors with target application timelines, establishing a basis for predicting drug target application outcomes.
- Constructed the LSTM-RNN model and predicted the application timeline for potential targets through the intricate relationships established between vectors and their corresponding labels, with an accuracy of 70%.

RESEARCH PROJECTS

LLM Security and Privacy Projects based on Machine Learning (online)   Sept 2023- Dec 2023
Cryptography Research Group, National University of Singapore

- Utilized Golay codes to validate the security of watermarking in large language models, employing adversarial training to enhance model robustness and processing speed.
- Identified fine-tuning attacks on large language models, demonstrating the effectiveness and robustness of the watermarking system.

Machine Learning-based Optical Alignment Technique   Feb 2023-June 2023
Undergraduate Thesis, Tsinghua University

- Developed a computer-aided calibration method using deep learning for aberration image processing, reaching an accuracy of 0.03λ (wavelength $\lambda=632.8$nm) of root mean square wavefront errors in multiple fields
- Simulated optical system misalignment to generate aberration images, developed a fully connected network model, and validated it using a Cassegrain telescope, achieving preliminary computer-aided calibration.

Research on HDMI Display Technology Based on Cameralink Industrial Camera   Aug 2021-Feb 2022
Laboratory of Relative Pose Precision Measurement, CIOMP, China Academy of Sciences

- Set up and fine-tuned the FPGA development environment.
- Developed a solid understanding of Cameralink and GigE protocols.
- programmed the FPGA board for image data storage and display.

SKILLS

Programming: Python, Matlab, Verilog HDL
Proficient in Machine learning, Natural language processing, Computational Biology