Jinyuan Sun

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EDUCATION

Beijing University of Posts and Telecommunications (BUPT) & Queen Mary University of London (QMUL)
Joint Program of Internet of Things Engineering, **Current GPA: 3.68/4.0,** 09/2020-06/2024
Bachelor of Engineering & Bachelor of Science (Engineering) with Honours
Computer Skills: Python (3yrs), C++ (3yrs), JAVA (3yrs), MySQL (2yrs), PyTorch (2yrs)
Standard Tests: IELTS: 7.5 (L: 8.0, R: 8.5, W: 6.0, S: 6.5) & 7.0 (L: 7.0, R: 8.0, W: 6.5, S: 7.0), taken in 08/2023
GRE: Verbal: 155, Quantitative: 167, Analytical Writing: 3.0, taken in 11/2023

AWARDS

- National Scholarship of China 11/2022
- Ministry of Education of China-Huawei Future Star Award 11/2022
- Second Scholarship of BUPT 12/2021

PUBLICATION

Shai He, Anlong Ming, Yaqi Li, **Jinyuan Sun***, ShunTian Zheng, Huadong Ma, **Thinking Image Color Aesthetics Assessment: Models, Datasets and Benchmarks**, Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV), 2023, pp. 21838-21847 Paper Link, Repo.

RESEARCH EXPERIENCE

Online Research Seminar: Hands-on Machine Learning for Finance and Python **08/2023-10/2023**

- Mentored by Patrick Rebeschini, Professor of Statistics and Machine Learning, Oxford University.
- Demonstrated expertise in utilizing key libraries (Pandas, Scikit-learn, PyTorch, TensorFlow, RAPIDS) and optimizing Python code for efficient data analysis.
- Applied state-of-the-art ML modals to address financial challenges using synthetic datasets.
- Completed the research paper of *A Comparative Analysis of Portfolio Optimization: LSTM vs. Random Forests* and the paper is accepted by CONF-SPML 2024 (The 4th International Conference on Signal Processing and Machine Learning)

Team Project: Minority Culture Protection and Promotion Project Supported by AI and Database Technology **02/2023-08/2023**

- Led the development of the Yao culture database, amassing 40GB data using the Java Springboot framework and MySQL. This initiative forms a foundational resource for preserving and promoting minority cultures.
- Applied CLIP for image semantic understanding, integrating a multi-modal retrieval function into the database.
- Competed in The 13th National College Students E-commerce "Innovation, Creativity and Entrepreneurship" Challenge, securing the 1st Prize in the Beijing division. Then participated in The 8th China International "Internet Plus" College Student Innovation and Entrepreneurship Competition, clinching the 2nd Prize.
- Granted Computer Software Copyright (Software Name: Data Management Generation System Based on Database and Artificial Intelligence V1.0, in process of publication) by National Copyright Administration.

Academic Research: Image Color Aesthetics Assessment **01/2023-07/2023**

- Supervised by Prof. Anlong Ming, School of Computer Science at BUPT.
- Developed a novel deformable transformer module to enhance the Swin Transformer model's backbone network, replacing SW-MSA. Applied the module for global feature map processing, effectively capturing long-range relationships.
- Conducted extensive training on the proposed module using our ICAA17K dataset. Evaluated its performance against 14 state-of-the-art baseline models, overseeing training and parameter adjustment on servers.
- Led the research paper's Model section, contributing to the paper titled "Thinking Image Color Aesthetics

Assessment: Models, Datasets, and Benchmarks," accepted by the ICCV2023.

- Involved in comprehensive research paper writing, contributing to the Introduction, Proposed Approach, and Experiments sections.

Academic Research: Text to Image Generation Enhanced by Retrieval at Zhizi AI Engine **09/2022-04/2023**

- Supervised by Prof. Zhiwu Lu, Gaoling School of Artificial Intelligence at Renmin University of China.
- Orchestrated the organization and pre-processing of a Chinese painting dataset and executed training on the dataset, configuring the diffusion model to generate images stylistically aligned with Chinese paintings.
- Introduced an innovative image supervision module to Stable Diffusion and trained the model on A100 GPUs.
- Utilized CLIP's strong verbal comprehension capabilities to establish a retrieval mechanism for identifying the most similar images, guiding the denoising process, and achieving image-guided image generation functionality.

Team Project: 5G-based Smart Water Cruising Device For Floating Garbage Cleaning **04/2022-07/2022**

- Led conceptualization and structure design of a catamaran, incorporating a unique drainage front fork and trash basket. Executed hull modeling using Solidworks and employed 3D printers for part fabrication and assembly.
- Spearheaded electric control design, deploying a Raspberry Pi as the control interface and utilizing 5G for real-time data analysis from the onboard camera.
- Implemented YOLO V5 for AI algorithm development, achieving a recognition accuracy of 98.87% on an authentic river-floating garbage dataset.
- Successfully competed in The 10th National College Students Mechanical Innovation Design Competition, securing 2nd prize in the Beijing division.

Individual Project: Wordle Game Development **04/2022-05/2022**

- Supervised by Prof. Ethan Lau, QMUL
- Developed a Java version Wordle based on Swing, available on Github at https://github.com/Jinyuan-S/JWordle

Team Project: Menura AI- Artificial Intelligence Enables Intelligent Light and Shadow **01/2022-08/2022**

- Supervised by Associate Prof. Shaoyong Guo, School of Computer Science at BUPT.
- Spearheaded the proposal of promotion plans, incorporating a shared training module for Star-GAN modules. Instrumental in enhancing MCD and MSD scores by 12% and 8%, respectively, to generate more authentic faces and voices.
- Successfully deployed the improved model on an Android app, demonstrating practical applications of the technology in real-world scenarios.
- Represented the project in The 8th China College Students' 'Internet Plus' Innovation and Entrepreneurship Competition, securing the National Bronze Award.

INTERNSHIP

RC-CN Smart infrastructure EP BD PAB PSU, SIEMENS Ltd, China **10/2023-Ongoing**

- Applied ML & statistical methods and data visualization techniques for meaningful insights over 50M records.
- Analyzed diverse datasets, including manufacturing, supply chain, and customer feedback.
- Developed interactive dashboards for effective communication of key performance indicators.
- Assisted product manager in managing SIVACON and SIBOARD partner and low voltage product line.

EXTRACURRICULAR ACTIVITIES

XIII Paralympic Winter Games Volunteer **01/2022-03/2022**

- Worked as a FNB Assistant and responsible for restaurant food safety quality inspection.

Student Union (Youth League Committee) Office Director **06/2021-06/2022**

- Organized all kinds of students activities though close cooperation and coordination with all departments at student union.

Class Monitor **09/2020-Ongoing**

- Assisted department counselor with all kinds of students' activities and issues in study and daily life.