Zhi-Bo Liu

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EDUCATIONS

Xi'an Jiaotong University, Xi'an, China

09/2021 - Now

Ph.D. Student in CS. Research Interests: Medical AI, Green AI

Peking University, Beijing, China

04/2017-11/2019

Visiting Student, Computer Vision

George Washington University, Washington, D.C., USA

09/2014-12/2016

Master of Science in Statistics

Huazhong University of Science and Technology, Wuhan, China

09/2010-06/2014

Bachelor of Science in Applied Mathematics

WORK EXPERIENCES

Boyuu Electric Company | Xi'an, China

12/2019-08/2021

Senior AI Researcher

- Participated in International Electrotechnical Commission(IEC) Standard Specification (TS) Drafting.
- Contributed to the State Grid Wuxi Electric Power Supply Company's science and technology project, independently completing the sixth chapter of the final technical report.

National Engineering Laboratory for Video Technology | Peking University, Beijing, China

04/2017-11/2019

Student Intern

- Participated in research on Reinforcement Learning, focusing on Multi-Agent Deep Reinforcement Learning Systems. Conducted coding and model training using publicly available datasets.
- Collaborated with teams from Tsinghua University's Future Lab on AI Art research and projects.

PROJECTS IN PROGRESS

Non-intrusive Load Monitoring Model based on Bidirectional Encoder Representations from Transformers

- ***Green AI :*** Built a Non-Intrusive Load Monitoring (NILM) deep learning model in Pytorch based on bidirectional encoder representations from transformers (BERT). Trained & tested on publicly available dataset. Paper is about to be submitted in May 2024

A Predictive Model for Steady-State Power Quality Indicators Based on Data Mining.

- ***Green AI:*** Built a prediction model for electric power quality indicators based on Vector Auto Regressive (VAR) Model. Trained and tested on collected dataset.

GymHisto: Custom OpenAI Gym Environment for Histopathology Image Analysis

- ***Medical AI:*** Built a Custom Farama Gymnasium environment using OpenSlide Python library for downstream task of whole slide image analysis. Paper writing is in progress.

HistoRL: Histopathology Image Classification with Deep Reinforcement Learning

- ***Medical AI:*** Developed a RL model based on policy gradient method in order to solve gigapixel whole slide image classification task. Model training & testing are in progress.

PUBLICATIONS

Zhibo Liu, Feng Gao, Yizhou Wang. A Generative Adversarial Network for AI-Aided Chair Design. *IEEE Conference on Multimedia Information Processing and Retrieval (IEEE MIPR), 2019* project page

- Presented a deep neural network designed to enhance the human process of chair design, incorporating an image synthesis module and a super-resolution module. This work represents the first instance of a physical chair created with deep neural network assistance, effectively bridging the gap between AI and design.

Juncheng Liu, Zhibo Liu. Analysis of Power Quality Evaluation Method Stipulated by IEC 62749: Assessment of power quality-characteristics of electricity supplied by pubic networks. *High Power Converter Technology, 2016*

- Analyzed various methods for evaluating power quality (PQ) and Electromagnetic Compatibility (EMC), concluding that under identical limitation values, PQ evaluation methods are stricter than those for EMC.

Juncheng Liu, Zhibo Liu. Analysis for Active Power Filter (APF) Application Bottlenecks. *Information Technology - Power Quality, 2012*

- Investigated the bottlenecks in Active Power Filter (APF) applications and its response characteristics to dynamic harmonics. Conducted simulations to assess APF response to changes in dynamic harmonic sources.

RESEARCH INTERESTS & SKILLS

Medical AI, Green AI, AI Art, Reinforcement Learning, Statistical Learning

Coding Skills: Python, Pytorch, Bash, Latex, TensorFlow, R, MATLAB, JavaScript