Dingrong Wang

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Education

Rochester Institute of Technology 2020 Sep. – Present
PhD. Student in Computing Information and Science *Rochester, NY*

Dalian University of Technology 2016 Sep. – 2020 Jul.
Bachelor in Computer Science (Software Engineering) *Dalian, China*

Research Experience

Graduate Research Assistant 09/2020-Present
Several topics, please refer to publication list for details *Rochester, NY*

- Reinforcement learning application to sketch retrieval, recommender system, dense objection detection and ASD patient analysis (time series classification).
- Offline reinforcement learning combining with active or semi-supervised learning, trying to build offline/off-policy reinforcement learning model fine-tuned by few human feedback.
- RL-driven NAS, network pruning, LTH, adversarial robust learning.

Group member 12/2018-01/2019
Vehicle obstacles detection based on binocular stereo vision technology *Dalian, China*

- Selected the outstanding deep learning stereo vision algorithm, with KITTI data set to generate binocular stereo vision UV disparity map as the data sources.
- Read related papers, calculated U and V disparity maps through the UV disparity map, and then restored the U and V disparity maps to the original picture in order to mark the obstacles.

Research Assistant 06/2017-07/2017
Design and Implementation of Content-Based Near-Duplicate Chart Retrieval System *Dalian, China*

- Learned to utilize the most popular algorithm of image features extraction, such as perceptual hash algorithm and edge detection histogram algorithm to build algorithm models
- Utilized web crawler techniques to collect pictures and charts as data sources and stored them into the SQL database.
- Designed the software framework, and used a series of frames and tools to realize the connection and coupling with front end, data base and algorithm
- Verified the robustness of algorithm through images transformation, such as stretching, expanding and shrinking, based on Python image processing technology

Industry Experience

Machine Learning Engineering Intern 09/2019-05/2020
Chinese OCR and full stack website development *Ruikebang Technology Co., Beijing, China*

- Used Chinese OCR yolo+CRNN model for text detection and scanning
- Tried image processing algorithms such as Hough transform and sifted algorithm to and detect lines and characters.
- Front-end website maintenance using JavaScript, CSS and HTML.
- Develop back-end machine learning algorithms to analyze data.
- Develop queries using SQL within Java DAO to retrieve data from database.

Applied Scientist Intern 06/2024-09/2024
LLM adaptation, prompt engineering, time series forecasting *Amazon, Bellevue, US*

- Construct large-scale ASIN data set with Amazon million-size data set retrieved from AWS service
- Prompt engineering and fine-tuning LLMs (llama, Claude, falcon) into the downstream tasks
- Leverage Prophet, Saison to conduct time series decomposition and forecasting

Technical Skill

Machine Learning

- **Deep Learning Framework:** TensorFlow, PyTorch
- **Machine Learning and Data Analysis Library:** Scikit-learn, Pandas, MatplotLib
- **Object Detection Framework:** Detection2, MM-detection
- **Image Processing:** OpenCV

Software Programming

- **Tools:** C, C++, Java, Python, R, Matlab, SQL, Tableau, Qt, Unix, CUDA, HTML, CSS, JavaScript
- **Courses:** Data Structure, Parallel Computing, Image Processing

Coupling Deep Textural and Shape Features for Sketch Recognition. PROCEEDINGS OF THE 28TH ACM INTERNATIONAL CONFERENCE ON MULTIMEDIA
Qi Jia, Xin Fan, Meiyu Yu, Yuqing Liu, Dingrong Wang, Longin Jan Latecki

Deep Reinforced Attention Regression for Partial Sketch Based Image Retrieval. PROCEEDINGS OF THE 21TH IEEE INTERNATIONAL CONFERENCE ON DATA MINING
Dingrong Wang, Hitesh Sapkota, Xumin Liu, Qi Yu

Deep Temporal Sets with Evidential Reinforced Attentions for Unique Behavioral Pattern Discovery. ICML 2023
Dingrong Wang, Deep Shankar Pandey, Qi Yu

Distributionally Robust Ensemble of Lottery Tickets Towards Calibrated Sparse Network Training. Neurips 2023
Hitesh Sapkota, Dingrong Wang, Qi Yu

LIBR+: Improving Intraoperative Liver Registration by Learning the Residual of Biomechanics-Based Deformable Registration. MICCAI 2024 (In Press)
Dingrong Wang, Soheil Azadvar, Jon Heiselman, Xiajun Jiang, Michael Miga, Linwei Wang

Reinforced Compressive Neural Architecture Search for Versatile Adversarial Robustness. KDD 2024
Dingrong Wang, Hitesh Sapkota, ZHIQIANG TAO, Qi Yu

Adaptive Important Region Selection with Reinforced Hierarchical Searching for Dense Object Detection. Neurips 2024 (In Press)
Dingrong Wang, Hitesh Sapkota, Qi Yu

Source-Data Free Multi-Source Domain Adaptation for Unsupervised Object Detection (In Submission)
Xiaofan Que, Dingrong Wang, Daniel Krutz, Qi Yu

Cross-domain Open Vocabulary Object Detection with Learnable Domain-adaptive Prompts (In Submission)
Xiaofan Que, Dingrong Wang, Daniel Krutz, Qi Yu

Conservative Evidential Exploration of Long-Term User Interest in Dynamic Recommender Systems. (In Submission)
Dingrong Wang, Krishna Prasad Neupane, Qi Yu