YANG PAN

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EDUCATION

Rice University Houston, Texas

Master of Computer Science *Aug. 2017 - Dec. 2018 (expected)*

Shanghai Jiao Tong University Shanghai, China

Bachelor of Science in Engineering, Automation *Sept. 2013 - June 2017*

RESEARCH EXPERIENCE

Research on Image Hashing and Retrieval Algorithms on Large Data Sets Shanghai, China

Department of Automation, Shanghai Jiao Tong University *Dec. 2016 - June 2017*

· Introduced additional constraints to the optimization problem of Latent Factor Hashing (LFH), and applied two-stage optimization method to maximize the penalized log-likelihood function.

· Added nonlinear features to enhance expressive power, and selected the optimal model using AIC.

· Experiments on CIFAR-10 and NUS-WIDE showed that the revised LFH achieved state-of-the-art performance.

Remote Sensing Laboratory Research Assistant Shanghai, China

Department of Automation, Shanghai Jiao Tong University *Dec. 2015 - Dec. 2016*

· Studied Rewarding Mechanism with its applications in Reinforcement Learning, and tested their validity.

· Studied STDP Mechanism and simulated Spiking Neural Networks on MATLAB to analyze network behaviors.

· Applied competitive learning rule (Winner-Take-All) to Self-Organizing Maps.

SELECTED PROJECTS

Website HurriCare for Natrual Disaster Response and Recovery Houston, Texas

Project for HackRice 7 Event *Sept. 2017*

· A website that provides disaster-related information, and serves to allocate donations after a natural disaster.

· Designed an efficient matching algorithm to allocate donations, such that the needs of the victims from damaged areas are met to the maximum extent, and the transportation distance for distributing is kept to be short.

· Implemented an analyzer with an SVM classifier to inference the location of dangerous areas from Twitter messages.

· Implemented an HTML webpage using Google Map API to display a map with markers indicaing dangerous areas.

Digits Recognizer with Multilayer Perceptron Shanghai, China

Supervised by Prof. Changchun Pan *Apr. 2016 - June 2016*

· Designed a robust image processing algorithm with OpenCV that could find and locate number digits on each frame of video streams quickly, even in a dark environment with irregular noises and target rotation.

· Constructed a multilayer perceptron (MLP) in C++ without existing machine learning framework, and trained MLP to predict number digits with the accuracy exceeding 99%.

Movie Information Query Database Shanghai, China

Supervised by Prof. Lanjuan Zhu *Sept. 2016 - Oct. 2016*

· Retrieved detailed data for top 250 movies on http://movie.douban.com with a crawler written in Python.

· Encapsulated movie data in an SQL database, which supports movie-queries by title, director, tag, etc.

· Designed a GUI with Qt, making it more convenient for users to use the system and acquire detailed information.

Autopilot System with Digital PID Controllers Shanghai, China

Supervised by Prof. Jingchuan Wang *Mar. 2016 - May 2016*

· Built a system guiding smart car along tracks with time needed per cycle over 20% less than average groups.

· Implemented an assistant controller to detect barriers on tracks and guide smart car to avoid them.

TECHNICAL STRENGTHS

Languages	Proficient in C/C++, Python; Comfortable with Haskell, MATLAB, Verilog
Platforms	Windows, macOS, Linux (Ubuntu)
Tools	TensorFlow, scikit-learn, OpenCV, MySQL, LaTeX, Multisim