

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

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.

Chess AI for Gobang

Shanghai, China

Supervised by Prof. Yue Zhou

Feb. 2017 - Apr. 2017

- Implemented an AI for Gobang in Python that used tree recursion, alpha-beta pruning and various heuristics.
- Able to learn from recorded games and dynamically readjust its algorithms, achieving better performance.

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, L ^A T _E X, Multisim