Mr.Chen Shangyu

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Research Area

Model Compression, Categorical Data Analysis

Education

2016 BS in Computer Science, Sun Yat-Sen University, Guangzhou, China

2020 (Expected) PhD in Computer Science, Nanyang Technological University, Singapore
Under supervision of Nanyang Prof. Sinno Jialin Pan

Publications

2017 Xin Dong, **Shangyu Chen**, Sinno Jialin Pan "Learning to Prune Deep Neural Networks via Layer-wise Optimal Brain Surgeon", To appear in Annual Conference on Neural Information Processing Systems 2017 (NIPS-17). Long Beach, USA. Dec. 4-9, 2017. (Full paper)

2016 Eun-Young Kang, Jianda Chen, Liu Ke, and **Shangyu Chen**, "Statistical Analysis of Energy-aware Real-Time Automotive Systems in EAST-ADL/Stateflow", *11th IEEE Conference on Industrial Electronics and Applications 2016*, IEEE Computer Society

Research Projections

2017 **Layer-Wise Model Compression by Prunning Unimportant Parameters**

- Formulated parameters prunning into an optimization problem by utilizing deep neural network layer output's change before and after prunning.
- Proved theoretical bound for final error.
- This work was accepted by Annual Conference on Neural Information Processing Systems (NIPS) 2017. [paper] [code]

2016 **System Verification and Validation Using UPPAAL, Stateflow and EAST-ADL**

- Transferred vehicle system verification models in Matlab/Stateflow, EAST-ADL into UPPAAL for formal verification.
- This work was accepted by 11th IEEE Conference on Industrial Electronics and Applications [Technical Paper] [Full Paper].

Applied Project

2015 **Image Recommendation System**

- Performed image recommendation based on images' *SIFT-saliency* and user browsing history.

- Project Homepage

2015 **Lane Detection and Inverse Perspective Mapping Generation**

- Designed and implemented an innovative algorithm to perform automatic *Inverse Perspective Mapping* of road, which tradditionally required camera to be calibrated maunally in advance.
- Performed lane detection based on inverse perspective mapping images.
- Project Homepage

2016 Final Year Project: **Vehicle Box for Advanced Driver Assistance Systems**

- Embedded *Lane Detection, Traffic Sign Detection, Pedestrian Detection* into hardware board (Jetson tk1) to provide development APIs.

Grants, honors & awards

2016 Three times of Outstanding Students Scholarship, Sun Yat-Sen University. (Top 10%)

Programming Languages

Python (TensorFlow, PyTorch), C++