Jiyuan Shen

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Education

Shanghai Jiao Tong University (SJTU), Shanghai 2013 -2017
School of Electronics, Information and Electrical Engineering (SEIEE)
Bachelor of Science in Computer Science
IEEE Honor Class (All courses taught in English, Enroll by: 11/987)
Major: 3.78/4.0, Overall: 3.7/4.0, Math: 93.4/100
***Interests*: Computer Vision, Machine Learning**

Publications

[1] L. Chen, J. Li, **J. Shen** and L. Jiang "Learning Variations and Defects: a Neural-network Retraining Method for Fault Tolerance in the RRAM Crossbar", *2017 Designed Automation and Test in Europe (DATE)*, Switzerland (submitted)
[2] **J. Shen**, X. Yang and Z. Fan "3D Reconstruction of Plant Leaves from Rough Multi-Photos", *2017 IEEE Winter Conference on Applications of Computer Vision (WACV)*, Santa Rosa, California (submitted)

Professional Service

Reviewer of 12th IEEE Conference on Automatic Face and Gesture Recognition (FG) 2017

Research Experiences

Microsoft Research Asia (MSRA) 2016.9 -present
Research Intern, Supervised by Principal Researcher Lin-tao Zhang, System Group

- Designed and implemented a TensorFlow speech analysis library.
- Implemented speech enhancement and recognition with TensorFlow deep learning.
- Implemented deepmind wavenet for raw audio.

University of California, Los Angeles (UCLA) 2016.7 – 2016.9
Research Intern, Supervised by Professor Song-chun Zhu, Vision, Cognition, Learning and Autonomy Center

- Scrawled data from Twitter REST including image and id and anayzed address information with Google Geocoding.
- Tracking the US Presidential Elections
  - Implemented tracking on News datasets f or year 2008 and 2012 including cnn, fox, msnbc etc.
  - Analyzed top week-topics with mention time (sentence-oriented) after conference resolution.
  - Displayed week-topics and topic trajectory for website graph analyzing.

Institute of Advanced Computer Architecture 2015.6 – 2016.9
Research Assistant, Supervised by Professor Li Jiang, in department of Computer Science, SJTU

- Implemented real-time three-dimensional reconstruction on medical body (skin standard), alpha version on Kinect.
- Quantified license plate recognition flow and implemented the model with CUDA parallelization.
- Co-supervised Compile Engineering Course Projects.
- Neural Network Retraining for Fault Tolerance
  - Designed redundancy combined with "Kuhn-Munkres" mapping method which is applied to the model of variation on memristors given by Vortex(DAC15) where features include normal distribution, random presence and weight-error relations instead of RRAM Crossbar computing.
  - Implemented Redundancy-Mapping on the standard 784*10 mnist dataset (20-30% advanced).
  - Theoretically analyzed the relationship of topology and mapping and improvements of the algorithm designed.

Visual Media and Data Management Center 2015.9 – 2016.1
Research Assistant, Supervised by Professor Bin Sheng, in department of Computer Science, SJTU

- Tested facial emotion recognition system and analyzed the performance.
- Theoretically presented short lectures on feature extraction algorithms including sift, surf etc.
- Three-Dimensional Reconstruction on Leaves (Multi-Photos)
  - Designed Filtering Feature Sequence as knn ratio, symmetry and ransac after surf.
  - Designed Surface-Stereo Lookup Table for scoring current frame plane coordinates with accordingly triangle three-dimensional coordinates in tracking processing iterations.
  - Implemented three-dimensional reconstruction on random reddish-green epipremnum aureum.
  - Theoretically analyzed performance benefit under filter algorithm and lookup table.

Work Experience

China Mobile Communication Corporation– Hunan Headquarter 2014.6 – 2014.8
Intern, Supervised by Chief Wan-zheng Bao, in department of Internet

- Discussed on week brainstorm conference and analyzed product ideas.
- Led the summer intern group and made a presentation at the final summarization conference.
- Maintenance: Inspected the base station, indoor system and tested the cell signal.

Selected Projects

Quadrotor Tracking and Identifying Control System *(Top 2 project in SEIEE)* 2014.9 - 2014.11
Supervised by Professor Shi-wen Zhang, in Institute of Advanced Electronic Technology, SJTU

- Co-developed a quadrotor control system based on A.R.Drone platform.
- Designed line-tracking and color-identifying algorithms.
- Implemented video streaming process and benchmarked image pattern recognition problem on built-in camera.

Disease Identification Modeling based on Machine Learning 2016.4 - 2016.6
Supervised by Professor Bo Yuan, in the Department of Computer Science, SJTU

- Taken various methods such as PCA, SVM and kNN to analyze dataset.
- Identified acute *myeloid leukemia* as the target disease and discovered its related genes.
- Evaluated classification algorithm and achieved results with high accuracy (98.8% in 593 testing samples).

Patent Classification Modeling based on Machine Learning *(Top 1 project in IEEE Honor Class)* 2016.5 - 2016.7
Supervised by Professor Bin Sheng, in the Department of Computer Science, SJTU

- Devised the classification algorithm mainly in learning kernel for massive patent classification by incorporating liblinear, minmax and a base classification (svm polynomial kernel).
- Evaluated with BCMI dataset and achieved results with high accuracy (97.92% in 37786 testing samples).
- Used multiple passing interface to achieve parallelism, and implemented parallel training (reduced time 2212s to 80s).

Leadership and Activities

Volunteer in Shanghai International Marathon	2015
Leader in SEIEE Class Mission	2015
Athelete in the 45th Sports Meeting of SJTU	2014
Network Leader in Freshman Welcome Dinner	2014
Class Commissary in charge of SEIEE Class Organization	2013
Secretary in Network Department of SEIEE Student Union	2013

Honors and Awards

The 4th Computer CCF Software Capacity Certification (C++)	2015
Academic Excellent Scholarship (Top5%)	2014
Secure TCP UDP Protocol (Honor Class Award 3/74)	2016
Patent Classification (Honor Class Award 1/74)	2016
Simple-C Compiler (Honor Class Award 1/74)	2015
MIPS CPU Simulator (Honor Class Award 1/74)	2014

Skills

Languages:	|	C/C++, Python, Java, HTML, OpenCV, Assembly Language, Verilog HDL, Cuda
Tools:	|	MATLAB, Octave, CMake, LaTeX, OpenMP, Pthread, Hadoop, Keras, TensorFlow
Platform:	|	Linux (preferred), IOS, Windows, Android, Embedded System
Miscellaneous:	|	Hulusi (Chinese Musical Instrument), Logo Design, Tennis.