WAYNE(YINGWEI) LI

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Department of Electrical and Computer Engineering
University of California San Diego, La Jolla, CA 92093 USA

TARGET POSITION

Full-time: Software Development Engineer, Machine learning Engineer, Computer Vision Engineer

TECHNICAL INTERESTS

computer vision; video analysis; data science; machine learning; software development

MAJOR PROJECTS

Large-scale Isolated Gesture Recognition Challenge Aug 2017-Sep 2017
Chalearn LAP Challenge@ICCV 2017 *San Diego, CA*

- Challenged to recognize 249 classes of gestures from RGB + D (depth) videos
- Trained a multi-modal 3D-CNN with more than 50,000 samples for gesture recognition
- Proposed 1) Region of Interest Masking 2) Multi-modality finetuning 3) Spatial-Temporal Pyramid encoding to improve performance
- Ranked 3rd place out of 12 attending teams, code and model is available: on github

Adobe Research June 2016-Sep 2016
Research Intern *San Jose, CA*

- Improved the in-house image auto-tagging and search system with deep learning
- Trained an image embedding network with word vectors
- Boosted the image search system with click-through data by ranking with positive enhancement
- Derived an online update algorithm for word embedding with a large dictionary
- Applied the embedding network for image dense tagging and implemented a real-time online web demo

Playing FlappyBird with Reinforcement Learning Apr 2017-Jun 2017
Side Project *San Diego, CA*

- An interesting trial to apply reinforcement learning on playing games:Video on YouTube
- Implemented a game simulator by python to interact with the reinforcement learning model
- Designed a Deep Q-learning model with memory replay in Pytorch
- Compared with a hand-crafted baseline policy and the Deep Q-learning achieved better results

$VLAD^3$: Encoding Dynamics of Deep Features for Action Recognition Jul 2015-Nov 2015
Research Project *San Diego, CA*

- Studied the importance of dynamics modeling in video action recognition
- Derived a VLAD encoding($VLAD^3$) with Linear Dynamic System(LDS) model for deep feature sequence
- Implemented the codebook learning and encoding of $VLAD^3$ with a modified Kalman smoothing algorithm
- Benchmarked against common baselines and achieved superior performance on common benchmark datasets(e.g. Olympic Sports, UCF101 and THUMOS14)

Microsoft Research, Asia Dec 2013-May 2014
Research Intern *Beijing, China*

- Designed and implemented an indoor 3D map reconstruction system: Video on YouTube
- Input: RGBD data from Microsoft Kinect sensor with a online C++ point cloud streamer
- Process I: Registration of consecutive frames by visual feature matching with Eigen library
- Process II: Globally optimize the pose graph and align large planes with G2O library
- Process III: De-noise and re-assign color of 3D points with PCL library
- Output: Full-size 3D map of a large indoor scene

Family Album: A Tangible Interface for Photo Sharing Oct 2012-Jun 2013
Core Team Member *Hefei, China & Palo Alto,CA*

- A collaborative project between Stanford University and USTC, sponsored by Microsoft Research Asia: Video on YouTube
- Collaborated with seven other team members to complete the project
- Iterated through the whole process of product design: need-finding, benchmarking, prototyping and testing
- In charge of: raspberry pi embedded system programming for OCR and photo uploading, windows phone A development

TECHNICAL STRENGTHS

- Experienced in GPU server configuration/optimization and Linux cluster management
- Fluent with common CUDA/C/C++/Python based neural network toolboxes(caffe, torch, pytorch, tensorflow etc)
- Familiar with computer vision and machine learning literature
- Skilled in building web demos and writing clear documents/reports/papers

EDUCATION/EXPERIENCE

University of California, San Diego *Sep 2014-Nov 2017*
Master of Science, Electrical and Computer Engineering
Overall GPA:3.945/4.0

University of California, San Diego *Sep 2014-present*
Research Assistant, Electrical and Computer Engineering
Statistical Visual Computing Lab (SVCL)

University of Science and Technology of China (USTC) *Sep 2010-Jul 2014*
BE, Electronic Engineering and Information Science
Overall GPA:4.02/4.3

PUBLICATIONS

Yingwei Li, Weixin Li, Vijay Mahadevan, Nuno Vasconcelos "$VLAD^3$: Encoding Dynamics of Deep Features for Action Recognition" *CVPR 2016*

SCHOLARSHIPS AND AWARDS

- Powell FellowShip Sep 2014
- MSRA Excellent Internship Award (top 5%) May 2014
- Guo Moruo Scholarship (the highest honor at USTC) Oct 2013
- Scholarship of the Institute of Electronics, Chinese Academy of Science (top 5%) Oct 2012
- National Scholarship (the highest honor offered by Ministry of Education, P.R. China) Nov 2011