Jiali Duan
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https://davidsonic.github.io/index

Research Interests

Computer Vision: Deep Learning, Reinforcement-learning

Education

Notice: Academic requirements in my country are very rigorous and scores could be generally lower compared to other parts of the world

University of Chinese Academy of Sciences Beijing, China
M.S. Computer Science (Cumulative GPA: 84.62/100) Sep. 2014 – Jun. 2017 (expected)
Advisor: Prof. Stan Z. Li (Institute of Automation, Chinese Academy of Sciences)

- Nominated Candidate in UCAS for National Award in China (Top %2) Sep, 2016
- Second Prize Scholarship in University of Chinese Academy of Sciences 2015-2016 (Top 5%) Mar,2016
- Second Prize Scholarship in University of Chinese Academy of Sciences 2014-2015 (Top 5%) Mar,2015
- Merit Student of University of Chinese Academy of Sciences 2015-2016 (Top 3%) June,2016
- Merit Student of University of Chinese Academy of Sciences 2014-2015 (Top 3%) May,2015

East China University of Science and Technology Shanghai, China
B.E. Information Engineering (Cumulative GPA: 3.25/4.0; Last 2 Years GPA: 3.44/4.0) Sep. 2010 – Jun. 2014
Thesis-Supervisor: Prof. Yu Zhu (East China University of Science and Technology)

- Academic Scholarship in East China University of Science and Technology 2011-2012 Sep,2012
- Academic Scholarship in East China University of Science and Technology 2010-2011 Sep,2011
- Outstanding Graduation Thesis in East China University of Science and Technology (Top 3%) Jul, 2014

Publications

- **Jiali Duan**, Shuai Zhou, Jun Wan, Xiaoyuan Guo, Stan Z.Li. Multi-Modality Fusion based on Consensus-Voting and 3D Convolution for Isolated Gesture Recognition. CVPR, 2017, **Submitted.**
- **Jiali Duan**, Shengcai Liao, Shuai Zhou, Stan Z. Li. Face Classification, A Specialized Benchmark Study. CCBR, 2016, **Best Student Paper**.
- **Jiali Duan**, Shengcai Liao, Xiaoyuan Guo, Stan Z. Li. Face Detection by Aggregating Visible Components. ACCV Workshop, 2016, **Oral.**

Competitions

- Second-place for English Speaking Competition in University of Chinese Academy of Sciences Dec, 2014
- Honorable Mention in MCM/ICM Math Modeling Contest for American College Students Mar, 2013
- Recommend Student for Summer Camp of ShanghaiTech University Jul, 2013
- Outstanding Prize in 21st Century Coca-Cola National English Speaking Contest Shanghai Region Dec, 2012
- Second Prize in National Mathematical Modeling Contest. May, 2012
- First Prize in Mathematical Modeling Contest in Shanghai. Mar, 2012
- First Prize for Extemporaneous English Speaking Competition in ECUST Dec, 2011
- More competition awards are available on my homepage

Certificates and Honors

- Advanced-Level English Interpretation Accreditation Certificate (5% annually). Jun, 2014
- Mid-Level English Interpretation Accreditation Certificate (10% annually). Jun, 2013
- FPGA Embedded Application Programmer Certificate Dec, 2013
- Volunteer and Referee for 16th China Adolescent Robotics Competition Jul, 2016
- More awards are available on my homepage.

StandardizedTests

- TOEFL: Reading 28, Listening 27, Speaking 23, Writing 30, Total 108.
- GRE General: Verbal 156 (72%), Quantitative 162 (82%), Analytical Writing 4.0 (59%)

Research Experience

Gesture Recognition Institution of Automation, Chinese Academy of Sciences Jul. 2016 – Aug. 2016 Center for Biometrics and Security Research

- Pre-trained a Faster-RCNN model for hand detection.
- Proposed a sequence based temporal segmentation algorithm for continuous gesture extraction.
- Hog feature and pair-wise skeleton structure are used to extract features from hand regions.
- Proposed a two-stream RNN for RGB and Depth Video, which are further concatenated by a 2-layered LSTM implemented using Keras.
- The Algorithm ranked 1st in Chalearn LAP Large-Scale Continuous Gesture Recognition Challenge on Codalab.
- I also implemented a 3D-convolution + SVM model for the challenge.

Face Classification Benchmark Institution of Automation, Chinese Academy of Sciences Jun. 2016 – Jul. 2016 Center for Biometrics and Security Research

- Constructed a Face Classification Benchmark using a fine-tuned RPN network on WIDER FACE.
- Compared the performance of hand-crafted feature extraction methods such as LOMO, LBP, MB-LBP, NPD using DQT+boosting with state-of-the-art end to end Convolutional Neural Networks using Cifar- 10 based CNN and Cascaded CNN following the paradigm of 2015 CVPR Paper (re-implemented).
- The paper was accepted as Best Student Paper in CCBR 2016.

Face Detection Institution of Automation, Chinese Academy of Sciences Mar. 2016 – Jun. 2016 Center for Biometrics and Security Research

- Proposed a novel component-based face detection framework that deals with occlusions and pose- variations simultaneously.
- Component-invariant mapping is proposed to handle the tricky issue of defining facial components under various poses and scales.
- Proposed a Local competition and Aggregation method for eliminating false positives.
- Symmetric detection is proposed to obviated the need for extra-training.
- The paper was accepted as Oral representation in ACCV Workshop 2016.

ResNet Classification Institution of Automation, Chinese Academy of Sciences Mar. 2016 – Apr. 2016 Center for Biometrics and Security Research

- Reproduce the result of ResNet-56 on Cifar10 with 92.54% accuracy using Caffe.
- Reproduce the result of ResNet-101 on ImageNet 1K with 6.58% top-5 error using Caffe.

Face Liveness Detection Institution of Automation, Chinese Academy of Sciences Sep. 2015 – Mar. 2016 Center for Biometrics and Security Research

Phase I:

- Trained a Fast-RCNN face detection model that achieves an AP of 0.93 on FDDB for face detection.
- Pre-trained a 85 facial-landmark SDM model for face alignment.
- Implemented a motion-based algorithm for face liveness detection.

Phase II:

- Reformulate Face-Liveness as a 3-class classification problem.
- Proposed to combine optical-flow and VGG features for face representation to deal with static image and video attacks respectively.
- All the algorithms are then embedded into Android using JNI.

Face Recognition Institution of Automation, Chinese Academy of Sciences Oct. 2015 – Jan. 2016 Center for Biometrics and Security Research

- Re-trained a DeepID model using CASIA-WEBFACE that achieves 95.47% accuracy with Joint Bayesian metric and 93.95% accuracy with Cosine metric.
- Re-implement the data layer, loss layer and normalization layer for DeepID2 that achieves 97.9% accuracy on LFW.
- Participated in improving 1: N and 1: 1 face verification algorithm of AuthenMetric.

Multi-task Face Attribute Analysis Institution of Automation, Chinese Academy of Sciences

Aug. 2015 – Oct. 2015 Center for Biometrics and Security Research

- Gender Classification demo using CNN.
- Age prediction demo using CNN.
- Smile prediction demo using CNN.
- All the training data are collected from imdb using Scrapy.
- Multi-task Face Attribute demo displayed using flask and tornado web-framework. All the demos are available on my personal github-page.

Person-Reidentification Institution of Automation, Chinese Academy of Sciences

Jul. 2015 – Sep. 2015 Center for Biometrics and Security Research

- Reproduce LOMO, BoW features and XQDA, MLAPG, KISSME metric learning methods on Market- 1501 database and experimented different hyper-parameters when making single query and multi- query evaluations.
- Collect an experimental person-reidentification dataset with a wide range of poses and appearances of pedestrians using Drones.

Palm Recognition System Institution of Automation, Chinese Academy of Sciences

May. 2015 – Jul. 2015 Center for Biometrics and Security Research

- Experimented SIFT, SURF, and FLANN for feature representation and matching.
- Implemented an Android interaction interface to take hand pictures. A C# service was implemented to match the uploaded image with hands stored in SQL for palm recognition.

Supplementary Materials

Notice: Url Links for credentials and awards mentioned above

- CVPR 2017 Submission, first author, arxiv: https://arxiv.org/pdf/1611.06689v1.pdf
- Best Student Paper (CCBR 2016): https://davidsonic.github.io/index/ccbr/Best%20Student%20Paper.pdf
- Oral Representation (ACCV Workshop 2016): http://www2.docm.mmu.ac.uk/STAFF/m.yap/programme.php
- Nomination for 2016 National Award in China (Top 2 %): http://eece.ucas.ac.cn/index.php/zh-CN/2014-06-13-06-44-38/2014-06-13-06-45-50/1316-20160913001
- Merit Student in UCAS 2014-2015 (Top 3%): https://davidsonic.github.io/index/images/exe-student1.png
- Merit Student in UCAS 2015-2016 (Top 3%): https://davidsonic.github.io/index/images/exe-student2.png
- Academic Scholarship in ECUST (twice): https://davidsonic.github.io/index/images/scholarship-ecust.jpg
- Outstanding Prize in 21st Century Coca-Cola Cup National English Speaking Contest Shanghai Region: https://davidsonic.github.io/index/images/outstanding.jpg
- Second-place for English Speaking Competition in University of Chinese Academy of Sciences: https://davidsonic.github.io/index/images/speech-ucas.png
- Honarable Mention in Beijing English Speaking Competition for Master Student: https://davidsonic.github.io/index/images/beijing-english.png
- First Prize in Mathematical Modeling Contest in Shanghai: https://davidsonic.github.io/index/images/math-shanghai.jpg
- Second Prize for National Mathematical Contest in Modeling: https://davidsonic.github.io/index/images/math-china.jpg
- Honarable Mention for MCM/ICM Mathematical Modeling Contest: https://davidsonic.github.io/index/images/math-US.png
- Recommend Student for Summer Camp of ShanghaiTech University: https://davidsonic.github.io/index/images/shanghai-tech.jpg
- Adavanced-Level English Interpretation Accreditation Examination Certificate (5% annually): https://davidsonic.github.io/index/images/Advanced-interpretation.jpg
- Mid-Level English Interpretation Accreditation Examination Certificate (10% annually): https://davidsonic.github.io/index/images/mid-level.jpg
- Volunteer and Referee for the 16th China Adolescent Robotics Competition: https://davidsonic.github.io/index/images/volunteer.png
- Second Prize for 2011 English Debating Competition in ECUST: https://davidsonic.github.io/index/images/2011-runner-up.jpg
- Second Prize for 2011 Uchallenge English Speaking Competition held by Foreign Language Teaching and Research Press: https://davidsonic.github.io/index/images/uchallenge-2nd.jpg

- First Prize for 2011 Extemporaneous English Speaking Competition in ECUST: https://davidsonic.github.io/index/images/ECUST-1st.jpg
- FPGA Embedded Application Programmer Certificate: https://davidsonic.github.io/index/images/FPGA.jpg
- Third Prize for The Most Beautiful Hometown photography competition: https://davidsonic.github.io/index/images/photo-ucas.png
- First Prize in Badminton Doubles in University of Chinese Academy of Sciences for 2014-2015: https://davidsonic.github.io/index/images/badminton.pdf
- Shanghai Java Programming Design (Level-2) Certificate: https://davidsonic.github.io/index/images/java-test.jpg
- National Computer Rank Examination Certificate C (Level-2): https://davidsonic.github.io/index/images/c-program.jpg
- Honarable Mention for The Most Beautiful Hometown poem competition: https://davidsonic.github.io/index/images/poem-ucas.png
- Second Prize for Electronic Assembly-Debugging and Developing Competition in ECUST: https://davidsonic.github.io/index/images/electronic-comp.jpg
- First Prize for English Speaking Competition for New Students in ECUST: https://davidsonic.github.io/index/images/new-ecust.jpg