Di Wu（吴迪）

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PROFESSIONAL EXPERIENCE

CAR INSURANCE AUTOMATIC EVALUATION

Lead Developer, Jan 2020 – current， Shenzhen, China

- Developed the computer vision system for automatic evaluation for car damage claim.
- On mobile platform, deploy AR technique (ARCore) for 6 DoF Car real time rendering and interaction.

EUMSSI PROJECT

Lead researcher, Jan 2015 – Jan 2016, Martigyn, Switzerland

- Developed the pipeline for person identification of people in video steams coming from broadcast TV.
- Improved the scalability of the pipeline and helped the team to achieve the excellent review for European Commission 7th framework (Programme: FP7-ICT) project.

SUMMER INTERNSHIP

Research Assistance, Jun 2013 – Aug 2013, Microsoft Research Cambridge, UK.

- Conducted proof of principle study using non-invasive depth camera for multiple-sclerosis patients.
- Joint research group from Novartis Pharm, University of Amsterdam and Imperial College London.

FREESCALE SMART CAR DESGIN

Lead developer, Jun 2008 – Aug 2008, Zhejiang University, China

- Designed a miniature intelligent car that can run on the previously unknown curvy line using homebrewed hardware and software.

EDUCATIONAL/WORK BACKGROUND

- 2019/07-2020/09 Senior Research Data Scientist, PingAn, Property and Causality Insurance Company (China)
- 2016/06-2019/06 Postdoc Perception for autonomous driving, Shenzhen University (China)
- 2015/01-2016/01 Postdoc. Perception and Activity Understanding, IDIAP, EPFL (Switzerland)
- 2010/09-2014/09 PhD. Electrical and Electronic Engineering, the University of Sheffield (United Kingdom)
- 2006/09-2010/06 B.Eng. Electrical and Electronic Engineering, Zhejiang University (China)

AWARDS FOR CHALLENGES

KAGGLE BAIDU/PEKING UNIVERSITY AUTONOMOUS DRIVING (BAIDU, 2020):

- Develop an algorithm to estimate the absolute pose of vehicles (6 degrees of freedom) from a single image in a real-world traffic environment.
- Ranking: **2st/864**, second place cash prize winner.

APPOLOSCAPE ECCV 2018 3D CAR INSTANCE UNDERSTANDING CHALLENGE (BAIDU, 2018):

- Designed a system to detect, reconstruct and estimate the 3D shape of the cars in a given video in a single image. A novel RCNN based network is proposed to train the 6DoF estimator in an end-to-end fashion.
- Ranking: **1st**, cash prize winner.

KAGGLE CVPR 2018 WAD VIDEO SEGMENTATION CHALLENGE (BAIDU, 2018):

- Evaluated various Mask-RCNN based models to segment movable objects, such as cars and pedestrians, at instance level within image frames.
- Participants include tech companies such as Megvii, DiDi, Nvidia Research, etc.
- Ranking: **3rd/145** (top 2%), cash prize winner.

FUTURE CHALLENGE - HELPING BALLOONS NAVIGATE THE WEATHER (ALIBABA CLOUD, 2017):

- Developed an efficient 3D A* algorithm for cargo balloons while avoiding volatile weathers.
- Ranking: 23th/1646 (top 1.4%).

MEDIAEVAL PERSON DISCOVERY CHALLENGE (MEDIAEVAL, 2015):

- Answered the two questions “Who speaks when?” and “Who appears when?” in broadcasting TV streams.
- Ranking: 1st/9.

PUBLICATIONS

• **D. Wu**, Y. Chen, X. Qi, Y. Jian, W. Chen, R. Xiao "Neural Mesh Refiner for 6-DoF Pose Estimation" , arXiv preprint arXiv:2003.07561, 2020.

• **D. Wu,** Z. Zhuang, X. Can, W.Zou and Xia Li "6D-VNet: End-to-end 6-DoF Vehicle Pose Estimation from Monocular RGB Images", IEEE Conference on Computer Vision and Pattern Recognition ***(CVPRW),*** Workshop on autonomous driving (WAD), 2019.

• **D. Wu**, L. Pigou, PJ. Kindermans, N. Le, Ling Shao, Joni Dambre, and Jean-Marc Odobez "Deep Dynamic Neural Networks for Multimodal Gesture Segmentation and Recognition". IEEE Transactions on Pattern Analysis and Machine Intelligence **(TPAMI)**, 2016.

• **D. Wu**, L.Shao "Leveraging Hierarchical Parametric Network for Skeletal Joints Action Segmentation and Recognition". IEEE Conference on Computer Vision and Pattern Recognition **(CVPR)**, 2014.

• **D. Wu**, W.Zou, X.Li, Y. Zhao "Kernalised Multi-resolution Convnet for Visual Tracking". IEEE Conference on Computer Vision and Pattern Recognition workshop **(CVPRW)**, 2017.

• Y. Tang, **D. Wu**, Z. Jin, W. Zou, X. Li, Multi-model Metric Learning for Vehicle Re-identification in Traffic Surveillance Environment, IEEE International Conference on Image Processing **(ICIP)**, 2017

• N. Le, A. Heili, **D. Wu**, JM Odobez "Efficient and Accurate Tracking for Face Diarization via Periodical Detection". International Conference on Pattern Recognition **(ICPR)** 2016.

• N. Le, A. Heili, **D. Wu**, JM Odobez "Temporally subsampled detection for accurate and efficient face tracking and diarization". International Conference on Pattern Recognition **(ICPR)**, 2016.

• N. Le, **D. Wu**, S. Meignier and JM Odobze "EUMSSI team at the MediaEval Person Discovery Challenge". Proceedings of the MediaEval workshop, 2015.

• **D. Wu**, L.Shao "Deep Dynamic Neural Networks for Gesture Segmentation and Recognition". ChaLearn in conjunction with European Conference on Computer Vision workshop **(ECCVW)**, 2014.

• **D. Wu**, L.Shao "Multimodal Dynamic Networks for Gesture Recognition". ACM Multimedia **(MM)**, 2014.

• **D. Wu**, L.Shao "Learning Deep and Wide: A Spectral Method for Learning Deep Networks". IEEE Transactions on Neural Networks and Learning Systems **(TNNLS)**, 2014.

• **D. Wu**, L.Shao "Multi-Max-Margin Support Vector Machine for Multi-Source Human Action Recognition". Neurocomputing, 2013.

• **D. Wu**, F. Zhu, L. Shao,H. Zhang, "One Shot Learning Gesture Recognition with Kinect Sensor". ACM Multimedia **(MM)**, 2012.

• **D. Wu**, F. Zhu, and L. Shao. "One shot learning gesture recognition from rgbd images". IEEE Conference on Computer Vision and Pattern Recognition workshop **(CVPRW)**, 2012.

• **D. Wu**, and L. Shao, "Silhouette Analysis Based Action Recognition via Exploiting Human Poses". IEEE Transactions on Circuits and Systems for Video Technology **(TCSVT)**, 2012.

• L. Shao, **D. Wu** and X. Chen, "Action Recognition Using Correlogram of Body Poses and Spectral Regression". International Conference on Image Processing **(ICIP)**, 2011.