

HANGJIAN ZHANG

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EDUCATION

Technische Universität Braunschweig

M.Sc. in Electrical Engineering

Advisor: Prof. Marcus Magnor, Prof. Tim Fingscheidt

Research Interest: Computer Vision, Deep Learning

Current GPA: 1.9/1.0

Apr 2015 - Sep 2018
Braunschweig, Germany

Xidian University

B.Eng. in Information Security

Advisor: Prof. Qingqi Pei

Outstanding Undergraduate Thesis 2014

Sep 2010 - Jul 2014
Xi'an, China

PUBLICATIONS

1. P. Guo*, L. Zhang*, **H. Zhang**, X. Liu, H. Ren, Y. Zhang. Adaptive Video Object Segmentation with Online Data Generation. *The 2018 DAVIS Challenge on Video Object Segmentation - in CVPR Workshops 2018* [[pdf](#)]
2. **H. Zhang***, L. Wöhler*, G. Albuquerque, M. Magnor. Automatic Infant Face Verification via Convolutional Neural Networks. in *International Symposium on Vision, Modeling, and Visualization (VMV 2018)* [[pdf](#)]

EXPERIENCE

Volkswagen Group China (CARIAD China)

Algorithm Engineer, AI Lab

Jan 2019 - Present
Beijing, China

- Develop machine learning models for text analysis and dynamic time-series data processing.
- Develop deep learning models for urban semantic segmentation, lane detection, model slimming and deployment on car environment in AR Navigation.
- Develop deep learning models for identification of interesting corner cases from in-vehicle camera and data augmentation and similarity in further stages.
- Analysis vehicle big data based on Spark and machine learning algorithms.
- 4 Chinese patents of algorithm-based product development.

Intel Labs China

Research Intern

Apr 2018 - Sep 2018
Beijing, China

- Worked with Dr. Haibing Ren and Dr. Yimin Zhang in RIL Lab.
- Focused on Video Object Segmentation, Person Re-identification and Semantic Segmentation.
- Awarded 4th place in DAVIS Challenge of Video Object Segmentation on CVPR Workshop 2018.
- Reimplemented Aligned Re-ID and converted models to deploy into the published SDK of Intel.
- Explored attention-based light-weight semantic segmentation methods.

Computer Graphics Lab (TU Braunschweig)

Research Assistant

Jan 2018 - Mar 2018
Braunschweig, Germany

- Advisor: Dr. Georgia Albuquerque
- Object Detection based on RetinaNet and Dilated CNN on PyTorch.

SELECTED PROJECTS

AI Corner Case Detection PoC

CARIAD China (Car.SW Org China)

Jan 2021 - Present

Beijing, China

- Develop deep learning models for identifying interesting corner cases from in-vehicle camera.
- Develop corner case detection of semantic segmentation with Siamese Network methods and object tracking.
- Explored corner case scene data augmentation with GAN methods.

AR Navigation PoC

Volkswagen Group China

Sep 2020 - Feb 2021

Beijing, China

- Implemented ENet and MobileNetv3 with DeepLabv3 by TensorFlow to get the defined region boundary and contours for correcting POIs location.
- Converted compressed and quantized model to TensorFlow Lite and deployed it on car Head Unit.

POI Themes Extraction PoC of Bentley

Volkswagen Group China

Jan 2020 - Apr 2020

Beijing, China

- Extracted POI themes from social commands with NLP methods, including word segmentation, word embedding with Word2vec, word similarity and top-k ranking methods.
- Applied it for most of parks and gardens of Beijing.

Charging Station Healthy Score Analysis

Volkswagen Group China

Sep 2019 - Dec 2019

Beijing, China

- Based on big data analysis and statistics of charging dynamic data from our content providers.
- Applied the Random Forest algorithm with Spark, Hive and MySQL.
- Result healthy scores present the charging station service quality and have been used in the in-car recommendation system.

Parking Tips for Scenery Traveling

Volkswagen Group China

Feb 2019 - Jun 2019

Beijing, China

- Extracted parking-related key information from social commands with NLP algorithms.
- Predicted the parking tips of easy parkings or hard parking with combining the text emotion analysis, text themes analysis and the spatial parking station data.

Semantic Segmentation on Cityscapes Dataset

Intel Labs China

Jul 2018 - Nov 2018

Beijing, China

- Designed models based on the Dilated ResNet and light-weight backbone.
- Explored the idea of attentions methods with FPN, DeepLab v3+ and Context Encoding, etc.

Person Re-identification

Intel Labs China

Jun 2018 - Sep 2018

Beijing, China

- Reimplemented Aligned Re-ID with PyTorch based on the work of third party.
- Converted the trained models to Caffe for deploying into the published SDK of Intel.

Weakly-supervised Video Object Segmentation

Intel Labs China

Apr 2018 - May 2018

Beijing, China

- Awarded 4th place in DAVIS Challenge of Video Object Segmentation 2018. [[link](#)]
- Focused on the re-identification of objects between the adjacent frames within a video.
- Published oral paper on CVPR Workshop 2018.

Automatic Infant Face Verification via Convolutional Neural Networks
Master Project and Master Thesis
Computer Graphics Lab (TU Braunschweig)

Jan 2017 - Dec 2017
Braunschweig, Germany

- Created a new infant face database (4,528 images of 42 subjects at 0-6 years old).
- Designed new CNN models(Siamese Net + ResNet/Inception) on Caffe/PyTorch. [\[github\]](#)/[\[github\]](#)
- Built a user interface(GUI) as an application.
- Published paper on *VMV 2018* as first author.

TECHNICAL STRENGTHS

Interested Area	Deep Learning, Computer Vision.
Programming Languages	Python, C/C++, L ^A T _E X, shell.
Deep Learning Toolbox	PyTorch, TensorFlow, Caffe, OpenCV, dlib.
Languages	Chinese(native), English(fluent), German(DSH-2).

HONORS & AWARDS

- Awarded 4th-place in DAVIS Challenge on Video Object Segmentation 2018.
- Outstanding Undergraduate Thesis 2014, Xidian University.
- The third-class China National Scholarship of 2011, 2012, 2013, Xidian University.
- Outstanding Student Leaders, Xidian University.

CERTIFICATES

- American Heart Association CPR & First Aid
- American Council on Exercise Certified Personal Trainer