REN LI

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EDUCATION

Purdue University *August 2016 - May 2019*
MS in Electrical and Computer Engineering Overall GPA: 3.94/4.0
Department of Electrical and Computer Engineering

University of Science and Technology of China (USTC) *August 2012 - June 2016*
Bachelor of Electrical Engineering Overall GPA: 4.02/4.3
Department of Electrical Engineering and Information Science Rank: 1/106

TECHNICAL STRENGTHS

Computer Languages Python, C/C++
Software & Tools PyTorch, TensorFlow, MATLAB

EXPERIENCE

United Imaging Intelligence, Research Intern September 2019 - Present
Project: Human Mesh Recovery

· Propose a depth-aware human mesh recovery focusing on resolving pose ambiguities.
· Design novel techniques, such as dynamic fusion, universal SMPL constraint generator and depth ranking consistency, to provide valid supervisory signals for training with limited datasets and annotations.

SenseTime, Research Intern/Technical Advisor May 2019 - Present
Project: Face Swap

· Re-implemented the models of Deepfacelab by PyTorch, and trained the models with additional losses, such as perceptual loss and L1 pixel loss, to improve the quality of the generated faces.
· Used triangulation and facial color tuning to merged the fake target faces, driven by the given video, back to the original target, which helps the fake videos look more realistic and stable.
· Analyzed the requirements in data of how to swap face successfully.

Purdue University, Research Assistant January 2018 - May 2019
Project: EEG-Based Visual Classification

· Recorded EEG signals of subjects who were watching images/videos.
· Analyzed EEG signals by different models, including CNN, LSTM, MLP, SVM and K-NN, to do the image/video classification for the understanding of human perception.
· Refuted some works in this filed which achieved high accuracy via wrong experimental settings.
· Visualized the spatial, temporal and spatio-temporal activation maps of the human brain by novel methods.

Purdue University, Research Assistant October 2018 - November 2018
Project: Visual Relationship Detection Based Video Retrieval

· Generated object proposals by Faster R-CNN and tracked them to produce object tubes.
· Built a CNN model to infer the visual relationship between two objects within a video frame from their corresponding visual features.
· Assembled the frame-level visual relationship to get the video-level tags, which can be used for video retrieval.

Purdue University, Research Assistant May 2018 - May 2019
Project: Deep Intermodal Video Analytics (DIVA-IARPA)

- Responsible for the implementation of metrics.
- Through the comparison between the results of my implementation and the official scorer, pointed out the bugs existing in the scorer and assisted NIST to fix them.
- Corrected the ill-defined metrics in the released documents.

Gottfried Wilhelm Leibniz Universitt Hannover (LUH), Research Assistant January 2016 - May 2016
Project: Contact-Free Camera Measurements of Heart Rate

- Extracted the color traces of RGB channels within the face region by face detection and tracking algorithms.
- Derived the heart rate from the green channel by filtering and frequency analysis.
- Achieved a more robust and accurate performance on heart-rate estimation than other state-of-the-art benchmarks.

USTC, Research Assistant June 2014 - December 2014
Project: Synthesis Distortion Estimation in 3D Video

- Analyzed the virtual view synthesis distortion induced by depth error for 3D video coding.
- Refine the distortion estimation model based on statistical information.
- Discussed experiment results: how the number and the position of synthesized views influence empirical synthesis distortion.

PUBLICATIONS

Ren Li, Changjiang Cai, Georgios Georgakis, Srikrishna Karanam, Terrence Chen, and Ziyan Wu, *"Towards Robust RGB-D Human Mesh Recovery"*, submitted to CVPR, 2020.

Liming Jiang, Wayne Wu, **Ren Li**, Chen Qian, and Chen Change Loy, *"DeeperForensics-1.0: A Large-Scale Dataset for Real-World Face Forgery Detection"*, submitted to CVPR, 2020.

Ren Li, Jared S. Johansen, Hamad Ahmed, Thomas V. Ilyevsky, Ronnie B Wilbur, Hari M Bharadwaj, and Jeffrey Mark Siskind, *"The Perils and Pitfalls of Block Design for EEG Classification Experiments"*, IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), Dec. 2018 (under review).

Yijian Xiang, Lu Fang, **Ren Li**, N. M. Cheung, *"Depth Error Induced Virtual View Synthesis Distortion Estimation for 3D Video Coding"*, accepted by IEEE Data Compression Conference (DCC), Dec. 2014.

AWARDS & HONORS

Guo Moruo Scholarship*, USTC, 2015

National Scholarship (Top 2%), MOE of China, 2014

The Talent Program Scholarship (Top 3%), USTC, 2014

*Guo Moruo Scholarship is the first scholarship of P.R. China, and the most highly regarded honor by USTC students and alumni, in name of our first president Mr. Guo Moruo.