HAO WANG

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Division of Production Systems, Department of Industrial and Materials Science
Chalmers University of Technology

EDUCATION

Chalmers University of Technology 2021 - Current
Ph.D. *student* *Gothenburg, Sweden*
Supervisor: Åsa Fasth Berglund, Johan Stahre

The University of Edinburgh 2018 - 2019
MSc with Distinction *in Informatics* *Edinburgh, UK*
Supervisor: Robert B. Fisher

Beijing University of Posts and Telecommunications 2014 - 2018
B.Eng. *in Telecommunication Engineering* *Beijing, China*
Supervisor: Aidong Men

RESEARCH INTERESTS

My research interests lie in the general digital image analysis, assisted by the advanced computer vision techniques, especially in 3D vision & graphics scenario.

PUBLICATION

Conference

Face Forgery Detection by 3D Decomposition CVPR 2021 (Accept - Oral)
*Xiangyu Zhu**, ***Hao Wang****, *Hongyan Fei, Zhen Lei, Stan Z. Li* (*Equal contribution)

Beyond 3DMM Space: Towards Fine-grained 3D Face Reconstruction ECCV 2020
Xiangyu Zhu, Fan Yang, Di Huang, Chang Yu, ***Hao Wang****, Jianzhu Guo, Zhen Lei, Stan Z. Li*

ACADEMIC PROJECTS

Digital Face Manipulation Detection Mar. 2020 - Nov. 2020
CVPR 2021 (Accept - Oral)

- Introduced 3D decomposition into forgery detection
- Constructed facial detail to amplify subtle artifacts
- Proposed a two-stream FD^{2}Net to fuse the clues from original images and facial details
- Introduced a supervised attention module to highlight the discriminative region

Fine-grained 3D Face Reconstruction Oct. 2019 - Mar. 2020
ECCV 2020

- Proposed a novel solution to construct large-scale fine-grained 3D data from RGB-D images
- Constructed a new dataset, Fine-Grained 3D face (FG3D), with 200k samples for training
- Proposed a Fine-Grained reconstruction Network (FGNet) concentrating on shape modification in UV space

Gender Identification from 3D Facial Surface Model Feb. 2019 - Aug. 2019
Dissertation for Master's degree

- Proposed a novel method on 3D facial gender identification with machine learning & conformal mapping
- Evaluated the proposed method and obtained competitive performance (accuracy over 88%)

Action Recognition Model with First-Person Videos Jan. 2019 - Mar. 2019

- Evaluated third-person action recognition methods with first-person datasets
- Compared the differences between the third and first-person methods
- Proposed and studied a new model combining MobileNet and Two-stream Pyramid

Image Super-Resolution with Convolutional Neural Network Dec. 2017 - June 2018
Dissertation for Bachelor's degree

· Realized the subpixel-based image super-resolution method with pixel shuffle
· Tested the model on both image and video datasets

RESEARCH EXPERIENCE

National Laboratory of Pattern Recognition, CASIA Oct. 2019 - June 2021
Research Intern *Beijing, China*

· Advisors: Prof. Xiangyu Zhu, Prof. Zhen Lei
· Projects: Fine-grained 3D face reconstruction; Face forgery detection; Face anti-spoofing

Next Generation Internet Research Center, BUPT May 2017 - Oct. 2017
Undergraduate Research Assistant *Beijing, China*

· Advisor: Prof. Yang Liu
· Projects: Optimization on DASH-based video service in high-speed railway networks with stochastic methods; Network flow variation detection with mobile crowd sensing

ACADEMIC SERVICE

Reviewer: ICME

SKILLS

Programming Languages: Python, MATLAB, C/C++, Java, Go, VHDL, Verilog, Assembly Language

Tools: PyTorch, Tensorflow, OpenCV, Dlib

Others: Linux, Git, SQL, LaTeX, FPGA, Arduino, Raspberry Pi

REFERENCES

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Beijing University of Posts and Telecommunications
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