

HAO WANG

haowang@chalmers.se \diamond <https://hwang7308.github.io>

Division of Production Systems, Department of Industrial and Materials Science

Chalmers University of Technology

EDUCATION

Chalmers University of Technology

Ph.D. student

2021 - Current

Gothenburg, Sweden

The University of Edinburgh

MSc with Distinction in Informatics

2018 - 2019

Edinburgh, UK

Beijing University of Posts and Telecommunications

B.Eng. in Telecommunication Engineering

2014 - 2018

Beijing, China

PUBLICATION

Conference

Face Forgery Detection by 3D Decomposition

Xiangyu Zhu*, Hao Wang*, Hongyan Fei, Zhen Lei, Stan Z. Li (*Equal contribution)

CVPR 2021 (Oral)

Beyond 3DMM Space: Towards Fine-grained 3D Face Reconstruction

Xiangyu Zhu, Fan Yang, Di Huang, Chang Yu, Hao Wang, Jianzhu Guo, Zhen Lei, Stan Z. Li

ECCV 2020

ACADEMIC PROJECTS

Digital Face Manipulation Detection

CVPR 2021 (Oral)

Mar. 2020 - Nov. 2020

- Introduced 3D decomposition into forgery detection
- Constructed facial detail to amplify subtle artifacts
- Proposed a two-stream FD²Net 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

ECCV 2020

Oct. 2019 - Mar. 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

Dissertation for Master's degree

Feb. 2019 - Aug. 2019

- 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

Dissertation for Bachelor's degree

Dec. 2017 - June 2018

- 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

- 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

- 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, L^AT_EX, FPGA, Arduino, Raspberry Pi