

# HAO WANG

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National Laboratory of Pattern Recognition

Institute of Automation, Chinese Academy of Sciences

## EDUCATION

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### **The University of Edinburgh**

*MSc with Distinction in Informatics*

Supervisor: Prof. Robert B. Fisher

2018 - 2019

*Edinburgh, UK*

### **Beijing University of Posts and Telecommunications**

*B.Eng. in Telecommunication Engineering*

Supervisor: Prof. Aidong Men

2014 - 2018

*Beijing, China*

### **University of Skövde**

*Exchange Student in informatics*

Concentration: Operating Systems, System Administration

Sept. 2016 - Jan. 2017

*Skövde, Sweden*

## RESEARCH INTERESTS

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3D Vision & Graphics, AR/VR

## PUBLICATION

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### *Conference*

#### **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

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### **Digital Face Manipulation Detection**

Mar. 2020 - Present

- Proposed to detect forged face with facial detail
- Introduced a supervised Attention and a multi-modality solution

### **Furniture Detection and Classification**

Feb. 2020 - Aug. 2020

- Built a furniture recognition model based on Detectron2

### **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

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### National Laboratory of Pattern Recognition, CASIA

*Research Intern*

Oct. 2019 - Present

*Beijing, China*

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

### Next Generation Internet Research Center, BUPT

*Undergraduate Research Assistant*

May 2017 - Oct. 2017

*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

## SKILLS

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

**Tools:** PyTorch, Tensorflow, OpenCV, Dlib

**Others:** Linux, Git, SQL, L<sup>A</sup>T<sub>E</sub>X, FPGA, Arduino, Raspberry Pi

## REFERENCES

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**Prof. Robert B. Fisher** (The University of Edinburgh): [rbf@inf.ed.ac.uk](mailto:rbf@inf.ed.ac.uk)

**Prof. Xiangyu Zhu** (Chinese Academy of Sciences): [xiangyu.zhu@nlpr.ia.ac.cn](mailto:xiangyu.zhu@nlpr.ia.ac.cn)

**Dr. Zhuqing Jiang** (Beijing University of Posts and Telecommunications): [jzqing777@163.com](mailto:jzqing777@163.com)