

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 <i>Ph.D. student</i>	2021 - Present Gothenburg, Sweden
The University of Edinburgh <i>MSc with Distinction in Informatics</i>	2018 - 2019 Edinburgh, UK
University of Skövde <i>Exchange Student in Informatics</i>	Sept. 2016 - Jan. 2017 Skövde, Sweden
Beijing University of Posts and Telecommunications <i>B.Eng. in Telecommunication Engineering</i>	2014 - 2018 Beijing, China

PUBLICATION

Journal

- Beyond 3DMM: Learning to Capture High-Fidelity 3D Face Shape

T-PAMI

X. Zhu, C. Yu, D. Huang, Z. Lei, H. Wang, S.Z. Li

Conference

- Overview of Computer Vision Techniques in Robotized Wire Harness Assembly: Current State and Future Opportunities

CMS 2023

H. Wang, O. Salunkhe, W. Quadrini, D. Lämkuhl, F. Ore, B. Johansson, J. Stahre

- Review of Current Status and Future Directions for Collaborative and Semi-Automated Automotive Wire Harnesses Assembly

CMS 2023

O. Salunkhe, W. Quadrini, H. Wang, J. Stahre, D. Romero, L. Fumagalli, D. Lämkuhl

- Battery production systems: state of the art and future developments

APMS 2023

M. Despeisse, B. Johansson, J. Bokrantz, G. Braun, A. Chari, X. Chen, Q. Fang, C.A.G. Chávez, A. Skoogh, J. Stahre, N.T. Mathew, E.T. Bekar, H. Wang, R. Örtengren

- Deep Learning-Based Connector Detection for Robotized Assembly of Automotive Wire Harnesses

CASE 2023

H. Wang, B. Johansson

- Face Forgery Detection by 3D Decomposition

CVPR 2021 (Oral)

X. Zhu, H. Wang*, H. Fei, Z. Lei, S.Z. Li (*Equal contribution)*

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

ECCV 2020

X. Zhu, F. Yang, D. Huang, C. Yu, H. Wang, J. Guo, Z. Lei, S.Z. Li

RESEARCH PROJECTS

PLENary multi-User developMent arena for future industrial workspaces (PLENUM) 2022-2025
VINNOVA

- Aim: to provide industry with methods and design tools to create sustainable factories/workplaces/manual operations in a multi-user development environment.
- Objective: to develop and demonstrate an easy-to-use (low threshold) cost-effective interactive multi-user 3D environment for development, workplace design, upskilling and ergonomic analysis that includes thousands of users and reduces environmental impact.

Boosting the Exploitation of Standardisation Inputs from European Projects (STAND4EU) 2022-2024
EU

- To strengthen the links between research, innovation and standardisations ensuring that standardisation is an integral part of the European research and innovation landscape

Empowering Human Workers for Assembly of Wire Harnesses (EWASS) 2022-2025
SIP Produktion2030, VINNOVA

- Goal: to assist the industry in ensuring a sustainable work-life by empowering human workers during assembly of wire harnesses.
- Objective: to improve productivity, quality, and ergonomics of assembly installation of wire harnesses and high voltage cables using collaborative robots, thereby boosting the manufacturing of electrified vehicles.

DIGITAL work InStructions for cognitive work (DIGITALIS) 2022-2024
SIP Produktion2030, VINNOVA

- Challenge: to demonstrate how systematic development of cognitive support and information design can increase quality and flexibility in future production.

A Pan-European Network of Robotics DIHs for Agile Production (DIH²) 2019-2023
EU

- To spark incremental and disruptive innovations in over 300,000 Manufacturing SMEs and Mid-Caps
- [Project page](#)

OTHER PROJECTS

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

- 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

TEACHING EXPERIENCE

IMS020 - Simulation and Visualisation of Production Systems Sept. 2021 - Oct. 2021
Teacher and lab assistant Chalmers

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PPU055 - Virtual production Oct. 2021 - Dec. 2021
Teacher and lab assistant Chalmers

IMS020 - Simulation and Visualisation of Production Systems Sept. 2022 - Oct. 2022
Course coordinator, teacher, and lab assistant Chalmers

Course evaluation: 4.2/5.0

PPU055 - Virtual production Oct. 2022 - Dec. 2022
Teacher and lab assistant Chalmers

IMS020 - Simulation and Visualisation of Production Systems Sept. 2023 - Oct. 2023
Teacher and lab assistant Chalmers

ACADEMIC SERVICE

Reviewer: ICME

SKILLS

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

Tools: PyTorch, Tensorflow, OpenCV, Dlib, Plant Simulation, Visual Components, RobotStudio, PolyScope

Others: Linux, Git, SQL, L^AT_EX, FPGA, Arduino, Raspberry Pi