

TIANXING WU

<https://tianxingwu.github.io>

✉ tianxing001@e.ntu.edu.sg · 🌐 TianxingWu

🎓 EDUCATION

Nanyang Technological University (NTU) Singapore
PhD in Computer Science and Engineering Aug. 2023 – Present

- Supervised by [Prof. Ziwei Liu](#)

Nanyang Technological University (NTU) Singapore
Master of Science in Computer Control & Automation Jan. 2021 – Apr. 2022

- Supervised by [Prof. Yap-Peng Tan](#)

Harbin Engineering University (HEU) Harbin, China
Bachelor of Engineering in Automation Aug. 2015 – June 2020

- Supervised by [Prof. Qidan Zhu](#), [Prof. Zhi Zhang](#)
- Average Grade: 90.04 / 100

💼 EXPERIENCE

MMLab@NTU | S-Lab Singapore
Research Associate Apr. 2022 – Aug. 2023

- Work with [Prof. Ziwei Liu](#) on Visual Generation and Multi-modal DeepFake Detection

Lazada | Alibaba Group Singapore
Algorithm Intern June 2021 – Feb. 2022

- Competitive Intelligence team, work on multi-modal product matching based on CV+NLP

SenseTime Research Beijing, China
Computer Vision Research Intern Aug. 2020 – Dec. 2020

- General Model team, work on OCR, Image Quality Assessment and Human Action Retrieval

📖 PUBLICATION

Ziqi Huang*, **Tianxing Wu***, Yuming Jiang, Kelvin C.K. Chan, Ziwei Liu. ReVersion: Diffusion-Based Relation Inversion from Images. *Arxiv* 2023.

- Project Page: <https://ziqihuangg.github.io/projects/reversion>

Rui Shao, **Tianxing Wu**, Ziwei Liu. Detecting and Grounding Multi-Modal Media Manipulation. *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.

- Project Page: <https://rshaojimmy.github.io/Projects/MultiModal-DeepFake>

Rui Shao, **Tianxing Wu**, Ziwei Liu. Detecting and Recovering Sequential DeepFake Manipulation. *European Conference on Computer Vision (ECCV)*, 2022.

- Project Page: <https://rshaojimmy.github.io/Projects/SeqDeepFake>

RESEARCH & PROJECTS

Competitive Product Matching Based on NLP

June 2021 – Feb. 2022

M.Sc. Dissertation, performed in NTU & Lazada

- Proposed a two stage text-based product matching framework to retrieve competitive product groups on E-commerce platform
- Designed a novel loss function PNB Loss for fine-tuning Sentence-BERT in Ecommerce domain, enabling effective text representation learning on product titles with weakly-supervised labels

Image Quality Assessment for ID-card OCR

Oct. 2020 – Dec. 2020

Project at SenseTime Research

- Implemented CNN based NR-IQA and distortion type classification
- Trained Siamese Network as pretrained model which learn from ranked synthetic image pairs
- Constructed huge non-public authentically distorted image dataset for fine-tuning

Deep Learning Based Image Preprocessing for Maritime Scenes

Jan. 2020 – June 2020

B.Eng Thesis

- **Excellent presentation** (6 awardees of 42 students in the lab)
- Designed a new foggy image synthesis algorithm based on air scattering characteristics of sea fog
- Combined AOD-Net, DnCNN and CLAHE for defogging and denoising, with PyTorch and OpenCV
- Proposed a modular image preprocessing framework that can be effectively applied to maritime scenes

OpenVHead

Sept. 2019 – Jan. 2020

Independent Project ([Open-sourced on GitHub](#), 390+ stars)

- Built a vision-based head motion & facial expressions capture system for VTubers
- Front-end (Python): Face landmarks tracking using Kalman filter and mean filter; Pose estimation with PnP algorithm; Robust facial expression measure construction
- Back-end (Unity + C#): Smooth pose control with Kalman filter; Robust facial expression control using incomplete derivative PID with deadzone; Eye-blink modeling; Socket communication

★ SELECTED AWARDS & HONORS

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| • <i>Honorable Mention</i> , Mathematical Contest in Modeling (MCM) | 2018 |
| • <i>Outstanding Undergraduate Student in HEU</i> | 2017 |
| • <i>1st Prize & Champion</i> , ‘Shenzhen Cup’ Mathematical Modeling Challenge | 2017 |
| • <i>1st Prize</i> , Northeast China Mathematical Contest in Modeling | 2017 |
| • <i>1st Prize</i> , China Undergraduate Mathematical Contest in Modeling (Heilongjiang Division) | 2017 |
| • <i>1st Class Scholarship for Outstanding Students</i> | 2016 |

SKILLS

- **Programming Language:** Python, MATLAB, C
- **Software:** PyTorch, OpenCV, ROS, Simulink, Unity
- **Hardware:** STM32, 89C51, Arduino microcontrollers
- **Others:** Linux, Git

ENGLISH PROFICIENCY

- **IELTS:** 7.5 (Listening 8.5, Reading 9.0, Writing 6.0, Speaking 6.5)
- **GRE:** 324.5 (Verbal Reasoning 152, Quantitative Reasoning 169, Analytical Writing 3.5)