

# PENG ZHENG

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## Education

### Aalto University

2020 – 2023

Master of Science in ICT Innovation (Visual Computing and Communication), Overall GPA score: 4/5 Espoo, Finland

### University of Trento (UNITN)

2019 – 2023

Master of Science in ICT Innovation (Visual Computing and Communication), Overall GPA score: 27/30 Trento, Italy

### Hebei Normal University (HeBTU)

2015 – 2019

Bachelor of Engineer in Software Engineering, Overall GPA rank: 2/98, score: 85/100 Shijiazhuang, China

## Research Interests

- Computer Vision
- Image Segmentation
- Person Search
- AI for Biology

## Experience

### Shanghai AI Lab

Aug.2023 – present

Research Intern, led by [Prof. Wanli Ouyang](#) Shanghai, China

- Large Pre-trained Language Model for Mutli-Omics Single-Cell.

### Alibaba Group

Feb.2023 – Aug.2023

AIR Research Intern, supervised by [Dr. Deng-Ping Fan](#) & [Dr. Dehong Gao](#) Hangzhou, China

- Highly accurate segmentation for high-resolution image segmentation.

### Mohamed bin Zayed University of Artificial Intelligence (MBZUAI)

Jan.2022 – Sep.2022

Research Assistant, supervised by [Prof. Huan Xiong](#) & [Prof. Jie Qin](#) & [Dr. Deng-Ping Fan](#) Abu Dhabi, UAE

- Co-Salient Object Detection with Contrastive Memory and adversarial learning.

### Inception Institute of Artificial Intelligence (IIAI), G42

Mar.2021 – Jan.2022

Research Intern, supervised by [Prof. Jie Qin](#) & [Dr. Deng-Ping Fan](#) Abu Dhabi, UAE

- Co-Salient Object Detection with Group Collaboration.
- Person Search with Context Information.
- Person Search in An Anchor Free Style.
- Facial Sketch Synthesis.

### Computer Vision Lab, ETHZ

May.2019 – Jan.2021

Graduate Student, remotely supervised by [Prof. Xiaogang Cheng](#) Remote

- Video Motion Magnification.
- Anomaly Detection for Fine Instruments.

### School of EECS, KTH

Dec.2017 – April.2019

Undergraduate Student, remotely supervised by [Prof. Xiaogang Cheng](#) Remote

- Contact-less Thermal Comfort Detection for HVAC System.
- Visibility Detection in Foggy Highway.
- Vision-based Air Quality Estimation.
- Leaf Vein Extraction on the Swedish Rare Cypress Poplar.

## Publications

### Bilateral Reference for High-Resolution Dichotomous Image Segmentation

Peng Zheng, Dehong Gao, Deng-Ping Fan, Li Liu, Jorma Laaksonen, Wanli Ouyang, Nicu Sebe

CAAI Artificial Intelligence Research (CAAI AIR) (2024), [\[Code\]](#)[\[HF Demo\]](#)[\[HF Model \(500k DLs\)\]](#)[\[Project\]](#)[\[3P Apps\]](#)

### GCoNet+: A Stronger Group Collaborative Co-Salient Object Detector

Peng Zheng, Huazhu Fu, Deng-Ping Fan, Qi Fan, Jie Qin, Yu-Wing Tai, Chi-Keung Tang, Luc Van Gool

IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI) 2023, [\[Code\]](#)[\[Demo\]](#)

### Memory-aided Contrastive Consensus Learning for Co-Salient Object Detection

Peng Zheng, Jie Qin, Shuo Wang, Tianzhu Xiang, Huan Xiong

AAAI Conference on Artificial Intelligence (AAAI), 2023, [\[Code\]](#)

### Efficient Person Search: An Anchor-Free Approach

Yichao Yan, Jinpeng Li, Jie Qin, Peng Zheng, Shengcai Liao, Xiaokang Yang

International Journal of Computer Vision (IJCV) (2023): 1573-1405, [\[Code\]](#)

## MovieNet-PS: A Large-Scale Person Search Dataset in the Wild

Jie Qin, **Peng Zheng**, Yichao Yan, Quan Rong, Xiaogang Cheng, Bingbing Ni

*IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2023, [Code][Dataset]

## Facial-sketch Synthesis: A New Challenge

Deng-Ping Fan, Ziling Huang, **Peng Zheng**, Hong Liu, Xuebin Qin, Luc Van Gool

*Machine Intelligence Research (MIR)* 19.4 (2022): 257-287, [Code][Dataset]

## MTA-PS: Towards Practical Person Search in Videos

Tiancheng Ying, Rong Quan, **Peng Zheng**, Yichao Yan, Jie Qin

*International Conference on Image Processing (ICIP)* (2024), [Code][Dataset]

## Genomics-FM: Universal Foundation Model for Versatile and Data-Efficient Functional Genomic Analysis

Peng Ye, Weiqiang Bai, ..., **Peng Zheng**, ... et al.

*bioRxiv* (2024)

## Discriminative Consensus Mining with A Thousand Groups for More Accurate Co-Salient Object Detection

**Peng Zheng**

*M.S. Thesis*

## Patents

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### Vein Extraction Algorithm for Improving Canny Operator Based on Window Dynamic Threshold

**Peng Zheng**, Xiaogang Cheng, Zhaohui Zhang

*Publication Number CN109325498B, Application Date: 2018.07.26, Authorization Date: 2022.02.25.*, [Code]

## Academic Services

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### Reviewer of Journals:

T-PAMI (2022-), IJCV (2023-), TIP (2023-), PR (2023-), CVIU (2022-), TVCJ (2021-), etc.

### Reviewer of Conferences:

CVPR: 2023-2024, ECCV: 2024, AAAI: 2023-2025, ICASSP: 2024, etc.

## Awards

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Non-EU Merit Nomination Scholarship from EIT Digital.

Outstanding undergraduate thesis.

Major scholarship for every year in undergraduate years.

National Mathematical Modeling Competition Award Provincial Second Prize.

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## Skills

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**Programming:** Python, MATLAB, PyTorch, Keras, OpenCV, *etc.*

**Tools:** L<sup>A</sup>T<sub>E</sub>X, Inkscape, Linux, Git *etc.*

**Languages:** Chinese (native), English (fluent, 2 years in Europe + 1.5 years in UAE, IELTS 6.5).

## About

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**Initialization:** Luckily born in 1998.01.08, Yancheng City – a city makes hearts open.

**Hobbies:** Boating, Reading (Kafka, D.H. Lawrence, Camus), Starcraft, Go (Weiqi).

**Aspiration:** Scientist in Vision & AI, a Visioneer (Vision Pioneer) someday.

**Traits:** Tend to find novel and interesting things, both in daily life and research; love to share and help.