

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 (by Dec.2024)

Bilateral Reference for High-Resolution Dichotomous Image Segmentation (cited by 12)

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

CAAI Artificial Intelligence Research (CAAI AIR) (2024), [HF Model (3M+ DLs)][HF Demo][Code][Project][3P Apps]

GCoNet+: A Stronger Group Collaborative Co-Salient Object Detector (cited by 25)

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 (cited by 18)

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 (cited by 22)

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 (cited by 18)

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 (cited by 34)

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, under review at Cell), [Code]

Discriminative Consensus Mining with A Thousand Groups for More Accurate Co-Salient Object Detection (cited by 1)

Peng Zheng

M.S. Thesis (2023)

Patents

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]

Cooperations

FAL: \$60,000 GPU resource sponsorship. Act as a consultant on the [online deployment](#) of BiRefNet for their service.

Freepik: \$25,000 GPU resource sponsorship. Training BiRefNet for [2K applications](#) and [general matting](#).

Artkive: Act as a consultant on the fine-tuning with their custom data to help save memories into digital formats for families by BiRefNet.

Redmond.ai: \$10,000 GPU resource sponsorship. Training a newer version of BiRefNet for better inference on higher resolution images and videos with limited GPU memory.

Academic Services

Reviewer of Journals:

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

Reviewer of Conferences:

CVPR (2023-), ECCV (2024-), AAAI (2023-), ICRA (2024-), ICASSP (2024-), etc.

Awards

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.

Skills

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

Tools: L^AT_EX, Inkscape, Linux, Git *etc.*

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

About

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.