DinghaoYang

Curriculum Vitae

Alibaba Cloud
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WORK EXPERIENCE

Algorithm Engineer **Alibaba Cloud**
Machine Learning Platform for AI (PAI) *Jul. 2023 - Now*
Major Responsibility: Neural Network Compression & Optimization

EDUCATION

Peking University **Shenzhen, China**
M.Phil in Computer Science, GPA: 3.45/4.0 (83.0/100) *Sep. 2020 - Jul. 2023*
National Engineering Laboratory for Video Technology – Shenzhen Division
Research Areas: Computer Vision, 3D Vision

Tongji University **Shanghai, China**
B.Eng. in Software Engineering, GPA: 4.68/5.0 (91.8/100) *Sep. 2016 - Jul. 2020*
Rank: 8/179 (Top 4.5%).

RESEARCH EXPERIENCE

Sensetime Research, Data and Computing Platform **Shenzhen**
Advisor: Bing Wang, Weijia Li, SenseTime Research *Oct. 2020 - Jan. 2022*
- Focus on AI based data annotation algorithms
- I am principally responsible for the interactive data annotation algorithms for Sensebee, the data platform for SenseTime AI research. We propose and deploy deep learning-based algorithms to accelerate manual data annotations (*i.e.* image segmentation, image matting, 3D object detection).

Peng Cheng Lab **Shenzhen**
Advisor: Prof.Gao Wei, Peking University *Oct. 2019 - Jul. 2020*
- Focus on 3D vision and point cloud
- I apply manifold learning and graph neural network on point cloud analysis, and I also work on 3D object detection and medical point cloud analysis.

HONORS & AWARDS

- 22' Award for Scientific Research, Peking University (Top 10%)
- 20' Excellent graduate of Shanghai **(Top 5%)**
- 19' Shanghai Scholarship **(Top 1%)**
- 19' National Undergraduate Innovation Programs, Tongji University **(Top 5%)**
- 18' Shanghai First Prize in China Mathematical Contest in Modeling (Top 10%)
- 18' Microsoft Practice Space Outstanding Winner, MSRA **(10 of 119)**
- 18' Excellent Leader of Microsoft Student Club, MSRA
- 18' Tianchi Big Data Competition ICPR MTWI 2018 Word Detection Top 7%
- 17, 18', 19' Excellent Undergraduate Student , Tongji University **(Top 5%)**
- 17, 18' Social Activity Scholarship, Tongji University **(Top 5%)**
- 17, 18' First-Class Scholarship, Tongji University **(Top 5%)**
- 17' National Second Prize in China Mathematical Contest in Modeling **(Top 6.5%)**

PROJECTS

Unified Interactive Image Matting *Jul. 2021 – Nov. 2021*

Advisor: Bin Wang, Weijia Li, SenseTime Research

- One paper is submitted to IEEE TCSVT (CVPR 2022 1ba 2br).
- Current trimap-based image matting methods surfer from extensive labors of manual annotation, while trimap-free methods can not give prior for object saliency. And the state-of-the-art methods be trapped in transparent object matting, we propose a Unified Interactive image Matting method, which solves the limitations and achieves satisfying matting results for any scenario. UIM leverages multiple types of user interaction to avoid the ambiguity of multiple matting targets. And to unify the matting performance for transparent and opaque objects, we decouple image matting into two stages, *i.e.*, foreground segmentation and transparency prediction.

Boundary-aware Interactive Image Segmentation *Nov. 2020 – Apr. 2021*

Advisor: Bin Wang, Weijia Li, SenseTime Research

- One paper is submitted to ISPRS (JCR Q1, remote sensing).
- Interactive segmentation has been actively studied to relieve the burden of time-consuming annotation labor, we analyze the labeling process of interactive segmentation tools in detail and disentangle the key factors that affect labeling efficiency, from which the most important one is boundary prediction accuracy. We propose an Interactive Boundary-Aware Network for efficient and accurate object segmentation, which improves the annotation efficiency by more than 187%.

Manifold Learning based Point Cloud Analysis *May. 2020 – Jan. 2021*

Advisor: Wei Gao, Peking University

- One paper is accepted by ACM TOMM (CCF-B).
- We propose an efficient point cloud classification method via manifold learning-based feature representation. We devise both conventional manifold learning method and novel deep learning-based manifold projection method.

PUBLICATIONS

- **Dinghao Yang**, Wei Gao, *PointCHD: A Point Cloud Benchmark for Congenital Heart Disease Classification and Segmentation*. IEEE TMI. **(Under Review)**
- **Dinghao Yang**, Bin Wang, Yiqi Lin *et al.*, *Exploring the Interactive Guidance for Unified and Effective Image Matting*. IEEE TCSVT. **(Under Review)**
- **Dinghao Yang**, Bin Wang, Conghui He, Weijia Li. *IBANet: Interactive Boundary-Aware Network for Efficient and Accurate Object Segmentation*. ISPRS. **(Under Review)**
- **Dinghao Yang**, Wei Gao *et al. Exploiting Manifold Feature Representation for Efficient Classification of 3D Point Clouds*. ACM TOMM. 2021.
- Wei Gao, Lvfang Tao, Linjie Zhou, **Dinghao Yang** *et al. Low-Rate Image Compression With Super-Resolution Learning*. CVPRW 2020, pp. 154-155. 2020.
- Bin Wang, Yu Qiao, Dahua Lin, **Dinghao Yang** *et al. Cycle-consistent learning for weakly supervised semantic segmentation*. HUMA 2022, pp. 7-13. 2022.

ACADEMIC ACTIVITIES

- Journal reviewer: TCSVT
- Conference reviewer: ACM MM 2022, CVPR 2022, ECCV 2022, ICCVM 2023, ICDIP 2022, IJCAI 2022

TECHNICAL STRENGTH

- Programming Languages: Python, C/C++, C#, Matlab, Java, HTML/CSS, Javascript, LaTeX
- Platforms: Linux, Windows, macOS, Android
- Packages & Tools: PyTorch, Tensorflow, Keras, OpenCV, Git, Kubernetes