Minh Tran

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Summary

My research interests are deep learning algorithms for visual perception tasks (object detection, segmentation, pose estimation, etc.) and path/motion planning regarding visual perception. Currently, my work involves exploring deep learning algorithms for semantic and instance segmentation tasks in images and videos. I have authored several papers, including a first-author conference paper at BMVC on instance segmentation, two first-author conference papers on medical image segmentation at ISBI and ICPR, and a first-author journal paper on medical image registration at TMI. Additionally, I have contributed to projects related to mobile robot navigation (with a first-author publication at NICS) and federated learning for autonomous driving (with a co-author publication at IV). My works have received 110 citations, and my h-index is 4.

Skills

Computer Vision, Panoptic Segmentation, Deep RL, Pytorch, Detectron2, Mask2Former

Experience

AICV Lab, University of Arkansas
Graduate Research Assistant *Sep 2021 - Present*

- *Instance and Semantic Segmentation: (i) Developed amodal instance segmentation models (which aim to predict the whole segmentation of objects, including occluded parts). The models got state-of-the-art results on KINS, COCOA, etc.; (ii) Developed a solution to detect defective chicken carcasses based on high-quality semantic segmentation features: conducted a dataset containing approx. 7000 images with high-quality mask annotations; designed an approach that reached 98.43 AP with 10 AP gaps compared to SOTA methods.*
- *Behaviour Understanding in Poultry Science: Coordinated a framework that detects, segments multiple chickens and estimates their keypoints. The framework reaches 90 AP for detection and segmentation, and 80 AP for keypoints estimation. The framework is utilized for further chicken behaviour understanding.*

AIOZ AI
Research Engineer *Aug 2020 - Aug 2021*

- *Indoor Delivery Robot: Developed algorithms for localization module of an indoor self-delivery robot. The robot won runner-up at Qualcom Innovation Challenge 2021.*
- *Medical Imaging: Developed light-weight models for medical image registration. One paper got accepted at Transactions on Medical Imaging*

Education

University of Arkansas, Fayetteville, AR
Ph.D. in Computer Science (Advisor: Ngan Le) *Aug 2021 - Present*

University of Science, VNU-HCM
B.Sc. Honors in Computer Science *Sep 2016 - Oct 2020*

Selected Publication

Journal Papers

- **Minh Tran**, et al. **Light-Weight Deformable Registration Using Adversarial Learning With Distilling Knowledge, IEEE transactions on medical imaging**

Conference Papers

- **Minh Tran**, et al. **AISFormer: Amodal Instance Segmentation with Transformer, In The 33rd British Machine Vision Conference, 2022**
- **Minh Tran**, et al. **SS-3DCapsNet: Self-supervised 3D Capsule Networks for Medical Segmentation on Less Labeled Data, In 2022 IEEE International Symposium on Biomedical Imaging (ISBI)**
- Anh Nguyen, Tuong Do, **Minh Tran**, et al. **Deep Federated Learning for Autonomous Driving, In 2022 IEEE Intelligent Vehicles Symposium (IV), 2021**

Open source Projects

AIStron: Amodal Instance Segmentation Toolbox and Benchmark
AIStron is an open-source toolbox that provides current Amodal Instance Segmentation (AIS) methods.

Awards

Rodger S. Kline Chair Scholarship *Jan 2023*
Graduate scholarship for top-nominated graduate students at University of Arkansas
Reginald R. "Barney" & Jameson A. Baxter Graduate Fellowship *Aug 2022*
Graduate scholarship for top-nominated graduate students at University of Arkansas

Services

Reviewer at MICCAI 2023; **Teaching Assistant** CSCE 4133: Algorithms, University of Arkansas