Minh Tran

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Summary

My research interests are algorithms for visual generative tasks (amodal completion, image inpainting, virtual try-on, etc.); visual perception tasks (object detection, segmentation, and tracking); and vision and language interaction (VLMs, text-guided generation).

Skills

Amodal Completion, Inpainting, Virtual Try-on, Segmentation, Multiple Object Tracking and Segmentation, Stable Diffusion, Diffusers, Detectron2, Pytorch Lightning

Experience

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

- *Visual Generative: (i) Developing a **video amodal completion** model and dataset, (TextGuideVAC), designed to extract the selected object as a whole from videos. (ii) Advancing a **virtual try-on** approach (Catalyze) that aims to deliver hallucination-free virtual try-on results.*
- *Instance and Semantic Segmentation: (i) Developed **amodal instance segmentation** models (AISFormer ShapeFormer, AISDiff), which aim to predict the whole segmentation of objects, including occluded parts. The models got state-of-the-art results on amodal benchmarks (e.g KINS, COCOA); (ii) Developed a solution for **high-quality semantic image segmentation** features. The method beats SOTAs on custom datasets for aerial (SolarFormer) and poultry imagery (CarcassFormer).*
- *Multiple object tracking and segmentation: Developed a **multiple object tracking and segmentation** model (A2VIS) incorporating with amodal segmentation characteristic to enhance the tracking ability. The model beats SOTA methods regarding object tracking and video amodal segmentation.*

AIOZ AI
Research Engineer — *Aug 2020 - Aug 2021*

- *Indoor Delivery Robot: Developed algorithms for localization module of an indoor self-delivery robot (BeetleBot). The robot won runner-up at Qualcomm Innovation Challenge 2021.*
- *Medical Imaging: Developed a light-weight model (LDR-ALDK) 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

Conference Papers

- *ACCV 2024* – **Amodal Instance Segmentation with Diffusion Shape Prior Estimation**. ***Minh Tran**, Khoa Vo, Tri Nguyen, Ngan Le*
- *Neurips 2024* – **HENASY: Learning to Assemble Scene-Entities for Egocentric Video-Language Model**. *Khoa Vo, Thinh Phan, Kashu Yamazaki, **Minh Tran**, Ngan Le,*
- *BMVC 2022* – **AISFormer: Amodal Instance Segmentation with Transformer**. ***Minh Tran**, Khoa Vo, Arthur Fernandes, Michael Kidd, Ngan Le.*

Journal Papers

- *IEEE Transactions on Medical Imaging* – **Light-Weight Deformable Registration Using Adversarial Learning With Distilling Knowledge**. ***Minh Tran**, Tuong Do, Huy Tran, Erman Tjiputra, Quang D. Tran, Anh Nguyen.*

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

Department of Electrical Engineering and Computer Science Fellowship — *Nov 2024*
Graduate scholarship for top-nominated graduate students at University of Arkansas

Services

Reviewer at CVPR 2024, 2025, ACCV 2024, MICCAI 2023; **Teaching Assistant** CSCE 4133: Algorithms, University of Arkansas