Khoi Nguyen

Ph.D. in Computer Science

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Google Scholar: https://scholar.google.com/citations?user=Eul6W5kAAAAJ
Website: http://khoinguyen.org/

Research interests:

- Image/Video/3D understanding: Detection, Segmentation, and Reconstruction
- Few/Zero-shot/Open-vocabulary Learning and Vision-Language Models
- Efficient and Trustworthy Generative AI: Diffusion Models, Multimodal LLMs

EMPLOYMENT/AWARDS

Jul 2021 – Now

Research Scientist

VinAI Research

Awards

- Winner of ScanNet 3DIS - CVPR 2023, 2nd place of OpenSUN3D - ICCV 2023
- Best Paper - Honorable Mention Award, WACV 2023
- Outstanding Reviewer Award, ECCV 2020
- Vietnam Education Foundation (VEF) Fellowship (Cohort 2015)

EDUCATION

Sep 2017 – Jun 2021

Doctor of Philosophy in Computer Science

Oregon State University, Corvallis, OR, USA, advisor: Prof. Sinisa Todorovic

- Thesis: "Part-based and Uncertainty-Aware Few-shot Object Segmentation in Images"

Sep 2015 – Sep 2017

Master of Science in Computer Science

Oregon State University, Corvallis, OR, USA

- Thesis: "Relational Networks for Visual Relationship Detection",

Sep 2009 – Apr 2014

Bachelors's degree in Computer Science

Ho Chi Minh City University of Technology (HCMUT), HCMC, Vietnam

- Thesis: "Entity Disambiguation System based on Wikipedia",

STUDENT ADVISING

Main advise

- Vu Tuan Truong, Jul 2022 - now, **Vision-Language Models**
- Nguyen Ho Quang, Feb 2023 - now, **Trustworthy GenAI**
- Nguyen Qui Vinh Quang, Aug 2023 - now, **3D Human Mesh Recovery in Videos**
- Luu Nguyen Hoang Minh, Feb 2023 - now, **Text-to-3D Synthesis**

Co-advise

- Pham Duc Hai, Feb 2023 - now, **3D Scene Understanding from Monocular Cameras**
- Nguyen Duc Anh Phuc, Feb 2023 - now, **3D Point Cloud Understanding**
- Tran Dieu Uy, Feb 2023 - now, **Generalized 3D Generation**
- Nguyen Minh Hung, Aug 2023 - now, **Controled Video Generation**

Graduated

- Ngo Duc Tuan, Aug 2021 - Jul 2023, **3D Point Cloud Instance Segmentation**, now: PhD Student at Umass Amherst from 2023
- Pham Hai Chau, Aug 2021 - now, **Few-shot and Zero-shot Object Detection**, now: PhD Student at University at Buffalo from 2023

PUBLICATIONS

Published papers

- Phuc DA Nguyen*, Tuan Duc Ngo*, Chuang Gan, Evangelos Kalogerakis, Anh Tran, Cuong Pham, Khoi Nguyen, **Open3DIS: Open-vocabulary 3D Instance Segmentation with 2D Mask Guidance**, in *arXiv 2312.10671*
- Quang Nguyen*, Truong Vu*, Cuong Pham, Anh Tran, Khoi Nguyen, **Stable Messenger: Steganography for Message-Concealed Image Generation**, in *arXiv 2312.01284*
- Uy Dieu Tran*, Minh Luu*, Phong Nguyen, Janne Heikkila, Khoi Nguyen, Binh-Son Hua, **DiverseDream: Diverse Text-to-3D Synthesis with Augmented Text Embedding**, in *arXiv 2312.02192*
- Chau Pham*, Truong Vu*, Khoi Nguyen, **LP-OVOD: Open-Vocabulary Object Detection by Linear Probing**, in *Winter Conference on Applications of Computer Vision (WACV)*, 2024

- Quang Nguyen*, Truong Vu*, Anh Tran, Khoi Nguyen, **Dataset-Diffusion: Diffusion-based Synthetic Data Generation for Pixel-Level Semantic Segmentation**, in *Neural Information Processing Systems (NeurIPS)*, 2023
- Tuan Ngo, Binh-Son Hua, Khoi Nguyen, **GaPro: Box-Supervised 3D Point Cloud Instance Segmentation Using Gaussian Processes as Pseudo Labelers**, in *International Conference on Computer Vision (ICCV)*, 2023
- Tuan Ngo, Binh-Son Hua, Khoi Nguyen, **ISBNet: a 3D Point Cloud Instance Segmentation Network with Instance-aware Sampling and Box-aware Dynamic Convolution**, in *Computer Vision and Pattern Recognition (CVPR)*, 2023
- Hue Nguyen, Diep Tran, Khoi Nguyen, Rang Nguyen, **PSENet: Progressive Self-Enhancement Network for Unsupervised Extreme-Light Image Enhancement**, in *Winter Conference on Applications of Computer Vision (WACV)*, 2023, **(The Best Paper - Honorable Mention Award!)**
- Tuan Ngo, Khoi Nguyen, **Geodesic-Former: a Geodesic-Guided Few-shot 3D Point Cloud Instance Segmenter**, in *European Conference on Computer Vision (ECCV)*, 2022
- Thanh Nguyen*, Chau Pham*, Khoi Nguyen, Minh Hoai, **Few-shot Object Counting and Detection**, in *European Conference on Computer Vision (ECCV)*, 2022
- Khoi D. Nguyen, Quoc-Huy Tran, Khoi Nguyen, Binh-Son Hua, Rang Nguyen, **Inductive and Transductive Few-Shot Video Classification via Appearance and Temporal Alignments**, in *European Conference on Computer Vision (ECCV)*, 2022
- Duong Le*, Khoi D. Nguyen*, Khoi Nguyen, Quoc-Huy Tran, Rang Nguyen, Binh-Son Hua, **POODLE: Improving Few-shot Learning via Penalizing Out-of-Distribution Samples**, in *Advances in Neural Information Processing Systems (NeurIPS)*, 2021
- Khoi Nguyen, Sinisa Todorovic, **iFS-RCNN: An Incremental Few-shot Instance Segmenter**, in *Computer Vision and Pattern Recognition (CVPR)*, 2022
- Khoi Nguyen, Sinisa Todorovic, **A Weakly Supervised Amodal Segmenter with Boundary Uncertainty Estimation**, in *International Conference on Computer Vision (ICCV)*, 2021
- Khoi Nguyen, Sinisa Todorovic, **FAPIS: A Few-shot Anchor-free Part-based Instance Segmenter**, in *Computer Vision and Pattern Recognition (CVPR)*, 2021
- Khoi Nguyen, Sinisa Todorovic, **A Self-supervised GAN for Unsupervised Few-shot Object Recognition**, in *International Conference on Pattern Recognition (ICPR)*, 2020
- Khoi Nguyen, Sinisa Todorovic, **Feature Weighting and Boosting for Few-Shot Segmentation**, in *International Conference on Computer Vision (ICCV)*, 2019

Patents

- Khoi Nguyen, Maneesh Kumar Singh, **Computer Vision Systems and Methods for Information Extraction from Text Images Using Evidence Grounding Techniques**, in *US Patent*, 2021

PROFESSIONAL ACTIVITIES

Reviewer

- CVPR 2021, 2022, 2023, 2024
- ICCV 2021, 2023
- ECCV 2020, 2022
- NeurIPS 2022, 2023
- ICLR 2022, 2023, 2024
- Journals: TPAMI, TIP

Area Chair

- ACCV 2024

EXPERIENCE

Jun 2019 - Sep 2019

Research Intern

AIBee US Corp - Palo Alto, CA, USA

- Multi-person Tracking by Segmentation in Surveillance Camera
- Mentor: Dr. Chunhui Gu, Dr. Sinisa Todorovic, Dr. Silvio Savarese

Jun 2018 - Sep 2018

Research Intern

Verisk Analytics - the AI Innovation Lab, Jersey City, New Jersey, USA

- Apply Graph Neural Network to image document analysis for extracting semi-structured information (W2 Form)
- Mentor: Dr. Maneesh Singh