Tuan Duc Ngo

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CONTACT INFORMATION

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RESEARCH INTERESTS

My research interests are in the field of computer vision, with a specific focus on 3D understanding. I am developing algorithms and techniques for understanding the geometry and semantics of 3D scenes, with applications in autonomous driving, robotics, and augmented reality. I am also interested in exploring the possibilities of real-time deep learning on edge devices.

EDUCATION

Ho Chi Minh City University of Technology (HCMUT), Ho Chi Minh City, Vietnam
Bachelor of Computer Engineering, English Program Aug 2017 - Aug 2021

- Rank: 1/3000, *Valedictorian*
- GPA: 9.62/10.00 ≈ A+, *Excellent Degree*
- Thesis: "Real-time monocular 3D object detection system on embedded device" – Thesis Grade: 10.00/10.00
- Advisors: Dr. Duc Dung Nguyen and Dr. Hoang-Anh Pham

Le Hong Phong High School for the Gifted, Ho Chi Minh City, Vietnam
Major in *Mathematics* Aug 2014 - Jun 2017

PUBLICATIONS

Conferences

- **Duc-Tuan Ngo**, Binh-Son Hua, Khoi Nguyen, "ISBNet: a 3D Point Cloud Instance Segmentation Network with Instance-aware Sampling and Box-aware Dynamic Convolution", Under review at *Computer Vision and Pattern Recognition Conference (**CVPR**), 2023*
- **Duc-Tuan Ngo** and Khoi Nguyen, "Geodesic-Former: a Geodesic-Guided Few-shot 3D Point Cloud Instance Segmenter", in *European Conference on Computer Vision (**ECCV**), 2022*

Journals

- Bui MV∗, **Ngo DT**∗, Pham H, Nguyen DD., "GAC3D: improving monocular 3D object detection with ground-guide model and adaptive convolution", *PeerJ Computer Science Journal (a Q1 Computer Science Journal), 2021*

RESEARCH EXPERIENCE

VinAI Research, Ha Noi, Vietnam
AI Research Resident Aug 2021 - now

- Advisor: Dr. Khoi Nguyen, AI Research Scientist
- Main research topics: 3D Object Detection, 3D Point Cloud Instance Segmentation
- Project: "3D Point Cloud Instance Segmentation"
  - Introduce an efficient and robust sampling strategy and propose leveraging the bounding box as a geometric cue for 3D point cloud instance segmentation task.
- Project: "Few-shot 3D Point Cloud Instance Segmentation"
  - Propose a new task of 3D understanding, Few-shot 3D point cloud instance segmentation, and address it with a transformer-based 3D instance segmenter leveraging geodesic distance as a strong geometric cue.

AI Engineer (Applied Rotation Program) Jul 2022 - Oct 2022

- Advisor: Mr. Tuan Ho, AI Research Engineer
- Project: "Bird-eye-view semantic segmentation from multi-view fisheye images"
  - Participate in the Surrounding-View-Monitoring team to design and develop a new "Bird-eye-view semantic segmentation" feature, including data preparation, modeling, and deploying.
- Awarded as the best Applied Rotation Program project.

Technical talks

- Geodesic-Former: a Geodesic-Guided Few-shot 3D Point Cloud Instance Segmenter, *VinAI Research*, slide, video — Nov, 2022

Honors and Awards

- Class of 2021 **Valedictorian** of HCMUT (Rank 1/3000, graduated with the highest GPA (9.62/10.0 ≈ A+)) — 2021
- Scholarships for outstanding academic achievements, HCMUT — 2017 - 2021
- Honda Award (Awarded to top 100 undergraduate students in Vietnam) — 2020
- Third Prize in the final round of Digital Race - FPT — 2020
- First Prize in The 6^{th} Science and Technology Symposium for OISP Students, HCMUT — 2020
- KMS Talent Scholarship (Awarded to top 4 students in the CSE Faculty at HCMUT) — 2019
- Gold Medals in Vietnam Southern Regional Olympiad in Physics — 2015, 2016

Technical Skills

Programming skills:

- Proficient: Python (PyTorch, TensorFlow, numpy, scikit-learn)
- Familiar: C++, C#, Latex

Tools:

- ROS, Microsoft Azure, Docker, TensorRT, TensorFlow Lite

Languages

- Vietnamese: Native
- English: Proficient
  - IELTS: 7.5 (L: 8.0, R: 7.5, W: 7.0, S: 7.0)

References

Dr. Khoi Nguyen
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VinAI Research, Vietnam
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Associate Professor
Department of Computer Science
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