PHAM QUANG HIEU

Woven by Toyota
Software Engineer

3D computer vision • deep learning • autonomous driving

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EXPERIENCE

Woven by Toyota
Software Engineer *Jul 2021 – present*
- Tech lead of the autonomy edge compute team consisting of 5+ engineers. Working on model profiling, optimization, and quantization to deploy our ML-heavy autonomy stack onto the vehicle.
- Designed and developed a long-range (>100m) vision-based 3D detection model for our real-time perception system.

Lyft Level 5
Software Engineer *May 2021 – Jul 2021*
- Developed a new free-space prediction model in the perception stack for static obstacle avoidance. Set up an annotation pipeline for bird's-eye-view map elements prediction.
- Lyft Level 5 was acquired by Woven by Toyota in July 2021.

Meta Reality Labs
Research Intern *Aug 2020 – Nov 2020*
- Researched and developed a deep learning method for high-fidelity 3D eye segmentation using implicit neural representations.

Lyft Level 5
Software Engineering Intern *Feb 2020 – Jun 2020*
- Improved the performance of a LiDAR-based detection model on large vehicles. Led the migration effort of the detection code base from Tensorflow to PyTorch.

EDUCATION

Singapore University of Technology and Design (SUTD)
Ph.D. in Computer Science *2016 – 2020*
- Advisors: Dr. Sai-Kit Yeung and Dr. Gemma Roig
- Thesis: Data-driven 3D scene understanding
- SUTD President's Graduate Fellowship

Vietnam National University - Ho Chi Minh City University of Science
B.S. in Computer Science *2010 – 2014*
- Summa cum laude

SELECTED PUBLICATIONS

A*3D: An autonomous driving dataset in challenging environments
IEEE International Conference on Robotics and Automation (ICRA) *2020*
Quang-Hieu Pham*, Pierre Sevestre*, Ramanpreet Singh Pahwa, Huijing Zhan, Chun Ho Pang, Yuda Chen, Armin Mustafa, Vijay Chandrasekhar, and Jie Lin

LCD: Learned cross-domain descriptors for 2D-3D matching
AAAI Conference on Artificial Intelligence *2020*
Quang-Hieu Pham, Mikaela Angelina Uy, Binh-Son Hua, Duc Thanh Nguyen, Gemma Roig, and Sai-Kit Yeung

JSIS3D: Joint semantic-instance segmentation of 3D point clouds with multi-task pointwise networks and multi-value conditional random fields
IEEE Conference on Computer Vision and Pattern Recognition (CVPR) *2019*
Quang-Hieu Pham, Duc Thanh Nguyen, Binh-Son Hua, Gemma Roig, and Sai-Kit Yeung

Real-time progressive 3D semantic segmentation for indoor scenes
IEEE Winter Conference on Applications of Computer Vision (WACV) *2019*
Quang-Hieu Pham, Binh-Son Hua, Duc Thanh Nguyen, and Sai-Kit Yeung

SceneNN: A scene meshes dataset with annotations
International Conference on 3D Vision (3DV) *2016*
Binh-Son Hua, Quang-Hieu Pham, Duc Thanh Nguyen, Minh-Khoi Tran, Lap-Fai Yu, and Sai-Kit Yeung

SKILLS

Languages: English (fluent), Vietnamese (native)
Programming: C/C++, Python, CUDA, Pytorch, OpenGL, OpenCV