

RESEARCH INTERESTS

Video understanding including segmentation, inpainting and machine learning.

EDUCATION

- Hong Kong University of Science and Technology** Hong Kong
Ph.D. in Computer Science *Sept 2021 - Present*
- University of Science** Ho Chi Minh city, Vietnam
Bachelor degree in Computer Science, Honors Program. *Sept 2010 - Aug 2014*
 Thesis: Building the Facial Expressions Recognition System Based on RGB-D Images in High Performance.

SELECTED PUBLICATIONS

- Marine Video Kit: A New Marine Video Dataset for Content-based Analysis and Retrieval:**
 Quang-Trung Truong, Tuan-Anh Vu, Tan-Sang Ha, Jakub Lokoc, Yue Him Wong Tim, Ajay Joneja, and Sai-Kit Yeung. International Conference On Multimedia Modeling (MMM). Bergen, Norway. 2023. **ORAL**. Paper.
- SideInfNet: A Deep Neural Network for Semi-Automatic Semantic Segmentation with Side Information:**
 Jing Yu Koh, Duc-Thanh Nguyen, Quang-Trung Truong, Sai-Kit Yeung, Alexander Binder. European Conference on Computer Vision (ECCV). 2020. Paper.
- Urban Zoning Using Higher-Order Markov Random Fields on Multi-View Imagery Data:** Tian Feng*, Quang-Trung Truong*, Duc-Thanh Nguyen, Jing Yu Koh, Lap-Fai Yu, Alexander Binder, Sai-Kit Yeung. European Conference on Computer Vision (ECCV). Munich, Germany. 2018. (* Co-first author). Paper.
- SHREC'17: RGB-D to CAD Retrieval with ObjectNN Dataset:** Binh-Son Hua, Quang-Trung Truong, Minh-Khoi Tran, Quang-Hieu Pham, Lap-Fai Yu, Duc Thanh Nguyen, Sai-Kit Yeung. Eurographics 2017 - Proceedings of the Eurographics Workshop on 3D Object Retrieval (3DOR). France. 2017. Paper.
- Building the Facial Expressions Recognition System Based on RGB-D Images in High Performance:**
 Quang-Trung Truong, Quoc-Ngoc Ly. 8th Asian Conference on Intelligent Information and Database System (ACIIDS). Da Nang, Viet Nam. 2016. **ORAL**. Paper.

PREPRINTS

- Self-supervised Video Object Segmentation with Distillation Learning of Deformable Attention:**
 Quang-Trung Truong, Duc Thanh Nguyen, Binh-Son Hua, Sai-Kit Yeung. CVPR submission. 2024. Paper.

SERVICES

Reviewer: MMM(2023), WACV(2024).

WORK EXPERIENCE

- Nichietsu company** Ho Chi Minh city, Vietnam
Lead software engineer *2020 - 2021*
 - SupMesh:** Led a team in developing an application for assisting users in creating 3D models with features like model meshing, similar to Femap. Utilized C# for the front-end, C++ for the back-end using Helixtoolkit and Open CASCADE Technology.
- Vision, Graphics and Computational Design Group, SUTD** Singapore
Research Assistant *2016 - 2018*
 - A Robust 3D-2D Interactive Tool for Scene Segmentation and Annotation:** Converted a C++ annotated tool to a WebGL version, integrating superpixel and Markov Random Field for scene annotation. Improved website performance through the development of new JavaScript libraries. Technology: Javascript, C++.
 - 3D Object Detection:** Conducted a comprehensive review and proposed a convolutional recurrent neural network capable of capturing contextual information from object images, implementing the Deep Sliding Shapes paper on the SceneNN dataset. Technology: PyTorch, Matlab.

- **3D Object Retrieval:** Installed VGG and AlexNet networks for 2D and 3D object recognition. Co-organized the SHREC'17 challenge and contributed to a Eurographics workshop paper. Networks used were VGG, AlexNet ... Technology: PyTorch.
- **Urban Zoning from Geo-tagged Photos and Non VHR Satellite Images:** Proposed novel convolutional neural networks (CNNs) and implemented CNNs and Markov Random Field algorithms. Conducted analysis, developed algorithms, and compared with related methods. Output: ECCV paper. Technology: Torch, TensorFlow, C++.
- **Floor Plan Maker:** Enhanced functionality and performance of the Floor Plan Maker tool. Developed heuristic algorithms to facilitate the creation of 2D floor plans and their conversion to 3D models. Technology: NoteJS, PCL, WebGL.

• VIETMAP Company Limited

Ho Chi Minh city, Vietnam

Software engineer

2016

- **Real-time Vehicle Tracking System:** Developed APIs which used heuristic algorithms and calculation functions. Saved data up to a month each the vehicle managed and received its GPS signal throughout the duration of 6 seconds. Made considered scalable, maintainable of the system. Technology: C#, RabbitMQ, SQL.

• Artificial Intelligence Laboratory, VNU-HCM University of Science

Ho Chi Minh city, Vietnam

Researcher

2015- 2016

- **Speech Recognition System:** Built a Vietnamese automatic speech recognition system, focusing on domains such as news and official documents. Developed a n-gram language model using data crawled from sources like DanTri news and WebTretho. Utilized Hidden Markov Model (HMM) for acoustic modeling and CMU Language Model toolkit for language modeling. Technologies used: Python, SRI Language Modeling Toolkit, CMU Language Modeling, MIT LM Toolkit, SRILM Ngram, SRILM Toolkit.

SKILLS

- 10+ plus years of related experience
- Interest and ability to quickly learn and apply newer machine learning algorithms
- Programming skills in different OS (Linux, Windows), Python, C/C++, Perl, Bash Shell, Tensorflow, Torch, pyTorch, MATLAB, HTML, Javascript, OpenCV, OpenGL, PCL
- Knowledge of generating features from sensor technology like camera, lidar, GPS
- Take initiative to launch projects with the ability to quickly learn and develop own idea in an interdisciplinary environment
- Working knowledge of web technologies
- Good problem solving and analytic skills
- Knowledge of various databases such as MongoDB, SQL
- Strong expertise in deep learning

INVITED TALKS

- VNU-HCM University of Information Technology - Seminar Series June 21, 2023
Towards Attention-based Approaches for Video Object Segmentation

AWARDS

- **Research Travel Grant** HKUST 2022
- **Postgraduate Studentship** HKUST 2021-2023
- **University Student Mobile Programming Honor** Nokia 2013
- **SHREC'17: RGB-D to CAD Retrieval with ObjectNN Dataset** Third prize 2017