Anh-Dzung Doan

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EDUCATION

Ph.D. in Computer Science
The University of Adelaide
Mar. 2022 | SA, AU

B.Sc (Hons) in IT
Vietnam National University
Sept. 2013 | HCMC, VN

AWARDS

IEEE RA-L Best Paper Award 2021.

Best Paper Award, DICTA 2019.

3rd place & Innovation award in NASA Space Robotics Challenge.

University of Adelaide International Wildcard Scholarship.

MENTORSHIP

I co-supervise four Ph.D. students

- Andrew Du - *Topic*: Edge domain adaptation.
- Ryan Faulkner - *Topic*: Diffusion models for LiDAR.
- Tam Nguyen - *Topic*: Neuromorphic computing for robust fitting.
- Anh Vu Nguyen - *Topic*: Active learning for streaming data.

SERVICES

Conference reviewer
ICRA, IROS, CVPR, ICCV, ECCV, ACCV, ACML, AAAI, DICTA.

Journal reviewer
RA-L, IJRR, TMM, NCAA, APSIPA, TETCI.

SKILLS

Programming
C/C++, Python
MATLAB, Java
SQL

Frameworks
Pytorch
Robot Operating System (ROS)
Streamlit

Developer Tools
Eclipse, Pycharm, Visual Studio
Git and Github

Libraries
Detectron2, Faiss, OpenCV , Gurobi
COLMAP , Numpy, Matplotlib.

EXPERIENCE

AUSTRALIAN INSTITUTE FOR MACHINE LEARNING | Postdoctoral researcher
July 2021 – Present | South Australia, Australia

- Our test-time adaptation method efficiently mitigates the domain disparity between simulated and real images, including visible and infrared modalities.
- Our "when to adapt" method reduces 50%-90% energy usage for continual domain adaptation while maintaining object detection performance.
- Our hybrid quantum-classical robust fitting method offers a global solution or an error bound—a practical improvement over randomised heuristics like RANSAC.

THE UNIVERSITY OF ADELAIDE | Casual academic staff
July 2019 – Aug. 2022 | South Australia, Australia

- Mentored 5 master students, resulting in one earning a full Ph.D. scholarship.
- TA in courses "Foundation of Computer Science" and "Programming MATLAB & C"

AUSTRALIAN INSTITUTE FOR MACHINE LEARNING | Ph.D. student
Mar. 2018 – July 2021 | South Australia, Australia

- Developed scalable algorithms for life-long visual place recognition, exhibiting a sub-linear space-time complexity, particularly effective for scenarios involving continuous accumulation of new data.
  Won **IEEE RA-L Best Paper Award 2021** and **Best Paper Award in DICTA 2019**.
- Developed G2D—an interactive software to collect data from Grand Theft Auto V.
  G2D has been widely adopted by robotics and computer vision researchers worldwide.
- Developed a localisation solution for The University of Adelaide team.
  Won **3rd place and an innovation award** in the NASA Space Robotics Challenge.

NIANTIC | Research intern
June 2020 – Oct. 2020 | Remote

- Developed a 3D map summarisation method ***(US patent pending)***.

TEMASEK LABORATORIES@SUTD | Research Assistant
Oct. 2014 - Sept. 2017 | Singapore

- Developed algorithms for on-device visual localisation.
- Our visual localisation system could be processed entirely on a mobile device.

MOBILE VISION | Co-founder
Aug. 2013 - July 2014 | Ho Chi Minh City, Vietnam

- Developed algorithms, back-end, and front-end architectures of the mobile application of fine-grained object recognition.
- Our software could be deployable on Android OS.

SELECTED PUBLICATIONS

- **"Assessing Domain Gap for Continual Domain Adaptation in Object Detection"**
  Computer Vision and Image Understanding (CVIU) 2024.
- **"A Hybrid Quantum-Classical Algorithm for Robust Fitting"**
  IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2022.
- **"HM^4: Hidden Markov Model with Memory Management for Visual Place Recognition"**
  IEEE Robotics and Automation Letters (RA-L) 2021.
- **"Scalable Place Recognition Under Appearance Change for Autonomous Driving"**
  IEEE/CVF International Conference on Computer Vision (ICCV) 2019 ***(Oral)***.
- **"On-device Scalable Image-based Localization via Prioritized Cascade Search and Fast One-Many RANSAC"**
  IEEE Transactions on Image Processing (TIP) 2018.
- **"Learning to Hash with Binary Deep Neural Network"**
  European Conference on Computer Vision (ECCV) 2016.