

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.

ENGINEERING 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

- Develop human-in-the-loop test-time adaptation method, efficiently mitigating the domain disparity between simulated and real images, including visible and infrared modalities.
- Develop a “when to adapt” method, reducing 50%-90% energy usage for continual domain adaptation while maintaining object detection performance.
- Develop hybrid quantum-classical robust fitting method, offering 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 winning 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 under 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 the computer game GTA V. G2D has been widely adopted by robotics and computer vision researchers worldwide.
- Developed a localisation method for rover navigation. 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
- The method is currently under a **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 fine-grained object recognition software.
- The software could be deployed on an 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.
- **“HM⁴: 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.