Anh-Dzung Doan

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EDUCATION

Ph.D. in Computer Science
The University of Adelaide
Mar. 2022 | SA, AU
Thesis: Scalable Visual Place Recognition for Life-long Operation

B.Sc (Hons) in IT
Vietnam National University
Sept. 2013 | HCMC, VN
Thesis: Fusing Learned and Hand-crafted Features for Image Recognition

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 exhibits promising outcomes in mitigating the domain disparity between simulated and real images, including visible and infrared modalities.
- Our "when to adapt" strategy helps save 50%-90% energy usage for continual domain adaptation without sacrificing the overall performance of the object detector.
- Our hybrid quantum-classical robust fitting method provides a global solution or an error bound. This is a practical improvement over randomised heuristics (e.g., RANSAC).

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

- Mentored five master students in their final projects
- 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 algorithms for Life-long Visual Place Recognition.
- 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
- Led the development of the localisation solution for The University of Adelaide team, participating in the NASA Space Robotics Challenge (Final stage).

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.

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.

JAPAN ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY | Research intern
Feb. 2013 - Mar. 2013 | Ishikawa, Japan

- Conducted research in human action recognition.

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)***.
- **"Learning to Hash with Binary Deep Neural Network"**
  European Conference on Computer Vision (ECCV) 2016.

AWARDS

- **IEEE RA-L Best Paper Award 2021**.
- **3rd place & Innovation award in NASA Space Robotics Challenge**.
- **University of Adelaide International Wildcard Scholarship**.
- **IAPR/IPRS Best Paper Award**, DICTA 2019.