

An Thai Le

ROBOTICS RESEARCH · RESEARCH ASSISTANT

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Research Interest

My research interest focuses on mobile robotics including state estimation, localization and mapping, path planning and grasping. At the present, I am working on applying Reinforcement Learning in robotics control for stability and generalization in a variety of task descriptions.

Education

University of Stuttgart

M.Sc. IN INFORMATION TECHNOLOGY

Stuttgart, Germany

2019 - 2021

Frankfurt University of Applied Science

B. ENG. IN ELECTRICAL ENGINEERING AND INFORMATION TECHNOLOGY - GERMAN GPA: 1.5 - US GPA: 3.7/4.0

Frankfurt am Main, Germany

2015 - 2019

Le Hong Phong High School for the gifted

MAJORING IN APPLIED PHYSICS - GPA: 9.2/10

Ho Chi Minh City, Vietnam

2012 - 2015

Open-source Projects

RoboComp's basic components

GOOGLE SEASON OF DOC 2019

Stuttgart, Germany

September 2019 - November 2019

- Document robotics components such as hardware drivers, cognitive processing components, etc.
- Document tutorial of combining these components in RoboComp ecosystem for specific robotics tasks.
- Project website: [\[link\]](#), Project proposal: [\[link\]](#).

Flexible perception pipeline manipulation for RoboSherlock

GOOGLE SUMMER OF CODE 2018

Institute of Artificial Intelligence,
University of Bremen, Germany

May 2018 - August 2018

- Implement paralleled pipelines scheduler API.
- Improve performance of Robosherlock pipelines by paralleling pipeline processes.
- Implement robotics module dependencies query interface.
- Project: [\[link\]](#). Docs: [\[link\]](#), Certification: [\[link\]](#).

Multi-modal Cluttered Scene Analysis in Knowledge Intensive Scenarios

GOOGLE SUMMER OF CODE 2017

Institute of Artificial Intelligence,
University of Bremen, Germany

June 2017 - September 2018

- Implement symmetry-based object segmentation algorithm in complex and cluttered scene.
- Implement object segment API for grasping system.
- Project: [\[link\]](#). Demo: [\[link\]](#) Documentation: [\[link\]](#). Certification: [\[link\]](#).

Experience

Frankfurt University of Applied Science

RESEARCH ASSISTANT

Frankfurt am Main, Germany

May 2019 - Present

- Work with Prof. Peter Nauth to develop task-oriented robotics system that combines navigation and object grasping system.
- Research on applying Reinforcement Learning in robotics control to enhance control stability generalization on variety of task descriptions.
- Guide new student to operate robots in the Autonomous lab.

EyeQ Ltd.

ROBOTICS ENGINEER INTERN

Ho Chi Minh city, Vietnam

March 2018 to August 2018

- Collaborate with dev team to develop practical technical solution for customers, using various Machine Learning methods.
- Develop autonomous navigation system for mobile robot that is used in many industrial applications.

Intel Corporation

PRODUCT DEVELOPMENT ENGINEER INTERN

Ho Chi Minh city, Vietnam

Jan 2017 to May 2017

- Design and develop automated data systems to process and analyze high volume unit test data in Intel Assembly & Test Manufacturing.
- Weekly validate and report the quality of Intel Thunderbolt Product.
- Letter of Evaluation can be viewed in this [link](#).

Skills

LINGUISTIC

- **English** IELTS: 7.0/9.0 (Certified in 2019)
- **German**: Elementary proficiency
- **Vietnamese**: First language

COMPUTER SCIENCE

- **Language**: Python 2 & 3, C++11 & 14, Java, UNIX
- **Libraries and Frameworks**:
 - **Data Sciences**: numpy, sklearn, scipy, pandas, tensorflow.
 - **Robotics**: ROS, RoboComp, Gazebo, openAI Gym.
 - **Others**: \LaTeX , Matlab

Honors & Awards

SCHOLARSHIPS

- **DAAD Scholarship**, German Academic Exchange Service for study stay in Germany.
- **AmCham Scholarship**, Best of the Bests Award 2017: Top application score, top interview score.
- **eSilicon Scholarship**, Sunflower Mission 2017 Engineering & Technology Scholarship for Excellence

COMPETITIONS

Hackdays Rhein-Main Best solution Winner

Frankfurt am Main, Germany

HACKDAYS RHEIN-MAIN

May 2019

- Develop an app solution for dialysis patients to plan an optimal travelling round trip via cities, where dialysis treatments are possible.
- Work as Backend Developer to design optimized algorithms for trip planning and scheduling Competition website: <https://www.hackdays-rheinmain.com>

UNESCO Hackathon Vietnam Winner

Ho Chi Minh City, Vietnam

FOSSASIA AND UNESCO

October 2018

- Develop the web application, Klima Kage to provide up-to-date climate and environment data for journalists
- Project: [\[link\]](#).

Publications

CONFERENCE PAPERS

- **An T. Le**, M. Q. Bui, T. D. Le and N. Peter, "D* Lite with Reset: Improved Version of D* Lite for Complex Environment," 2017 First IEEE International Conference on Robotic Computing (IRC), Taichung, 2017, pp. 160-163. doi: 10.1109/IRC.2017.52
- T. D. Le, **An T. Le** and D. T. Nguyen, "Model-based Q-learning for humanoid robots," 2017 18th International Conference on Advanced Robotics (ICAR), Hong Kong, China, 2017, pp. 608-613. doi: 10.1109/ICAR.2017.8023674
- Q. H. Nguyen, T. N. P. Tran, D. D. Huynh, **An T. Le** and T. D. Le, "Real-Time Localization and Tracking System with Multiple-Angle Views for Human Robot Interaction," 2017 First IEEE International Conference on Robotic Computing (IRC), Taichung, 2017, pp. 316-319. doi: 10.1109/IRC.2017.53

BOOK CHAPTERS

- Khiem N. Doan, **An T. Le**, Than. D. Le & Pether Nauth. (2015). "Swarm Robots' communication and cooperation in motion planning". In Dan Zang & Bin Wei(Eds.), *Lecture Notes in Mechanical Engineering (Part I, Chapter 15) Mechatronics and Robotics Engineering for Advanced and Intelligent Manufacturing (pp 191-205)*, Springer International Publishing. DOI 10.1007/978-3-319-33581-0_15.

- **An T. Le** and *Than D. Le* (September 26th 2018). Search-Based Planning and Replanning in Robotics and Autonomous Systems, Advanced Path Planning for Mobile Entities, Rastislav Róka, IntechOpen, DOI: 10.5772/intechopen.71663. Available [here](#).

WORKSHOPS

- **Presented An T. Le**, "Search-based path planning and re-planning for robotics" The first International Workshop on Automation and Robotics, Vietnamese-German University, Vietnam, 2017.