

Curriculum Vitae

Personal Data

Name: Ty Nguyen
Email: tynguyen@seas.upenn.edu

Home: www.tyvannguyen.wordpress.com
Tel: +1-215-687-7964

Education

University of Pennsylvania, PA, U.S.

Aug.2016 - Present **PhD. in Computer and Information Science**
• Supervisor: Dr.Vijay Kumar and Dr. Daniel D. Lee

Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea

Mar.2014 - Jun.2016 **M.S. in Computer Engineering**
• GPA: 3.88/4.3
• Supervisor: Dr. Tsz-Chiu Au
• Thesis: "Vehicle Dynamics Modeling and Motion Planning with Predictable Timing and Velocity"

Hanoi University of Science and Technology (HUST), Hanoi, Vietnam

Aug. 2007 - Jun. 2012 **B.Eng. in Electrical Engineering**
• GPA: 8.42/10, in top 3.6% of the School of Electrical Engineering
• Thesis: "AGPS-Based Vehicle Tracking Systems"

MOOCs www.coursera.org

Mar. 2013 - May 2013 Achieve Distinction (97.1%) in **Digital Signal Processing**
Oct. 2012 - Dec. 2012 Achieve Distinction (91.8%) in **Writing in the Sciences**

Publications

1. **Ty Nguyen**, Tsz-Chiu Au. Extending the Range of Delivery Drones by Exploratory Learning of Energy Models. *16th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, Brazil, 2017 (to appear)
2. **Ty Nguyen**, Dung Nguyen, Tsz-Chiu Au. Vehicular Performance Model Learning for Motion Planning. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Canada, 2017 (to appear)
3. **Ty Nguyen**, Tsz-Chiu Au. Motion Planning for Arrival Time and Velocity Requirements on Non-homogeneous Terrains. *International Conference on Automated Planning and Scheduling (ICAPS) 3rd Workshop on Planning and Robotics (PlanRob)*, Jerusalem, Israel, 2015
4. **Ty Nguyen**, Tsz-Chiu Au. Dynamic Programming Approach for Motion Planning with Arrival Requirements. *IEEE International Conference on Robotics and Automation (ICRA) Workshop on Optimal Robot Motion Planning (WORMP)*, Seattle, U.S, 2015
5. **Ty Nguyen**, Tsz-Chiu Au. Instance-based Learning of Vehicular Performance Models. *IEEE Intelligent Robots and Systems (IROS) Workshop on Machine Learning in Planning and Control of Robot Motion (MLPC15)*, Hamburg, Germany, 2015
6. Tsz-Chiu Au, **Ty Nguyen**. Augmented Motion Plans for Planning in Uncertain Terrains. *International Joint Conferences on Artificial Intelligence (IJCAI) 9th International Workshop on Planning and Scheduling for Space (IWPSS)*, Buenos Aires, Argentina, 2015

Oral Presentations

"Dynamic Programming Approach for Motion Planning with Arrival Requirements", Workshop on Optimal Robot Motion Planning (WORMP), Seattle, U.S., 2015

Honors and Awards

Vietnam Education Foundation Fellowship, Dec. 2015

- Awarded up to 34 Vietnamese students with partly financial support for graduate study in the U.S. universities from Fall 2016

Presidential Award for Excellent Graduation, HUST, 2012

- Awarded to the top 30 out of 821 students in the School of Electrical Engineering

Intel Scholarship for Outstanding Academic Achievement, Intel Products Vietnam Ltd., 2009

- Awarded to the top 80 Vietnamese students, for academic achievement and social contributions

Research Experience

Visual Servoing and Manipulation of UAV and Mobile Robots Aug. 2016 - Present

- *Summary:* Devised end-to-end methods to control UAV and mobile robots, focusing on Deep Reinforcement Learning

Motion Planning Under Constraints Mar. 2014 - Jun.2016

- *Summary:* Devised methods to describe the configuration space of a mobile robot and proposed approaches to utilize a configuration space to do planning with arrival requirements. This work can also serve as a foundation for other problems such as optimization problem
- *Related publications:* [4]

Learning Vehicle Performance Models Mar. 2014 - Jun.2016

- *Summary:* Developed efficient methods to learn the performance model of a vehicle or a mobile robot and evaluated the performance of this model in planning. Methods to utilize this model to do planning were also studied. These works help handle difficulties in deriving sophisticated equations of the model of a mobile robot
- *Related publications:* [5,6]

Motion Planning under Uncertain Environments Mar. 2014 - Jun.2016

- *Summary:* Proposed a novel planning approach to cope with environmental uncertainties. The proposed approach is easy to implement and allow reuse of existing problem-specified offline planners
- *Related publications:* [7]

Video-Based Traffic Surveillance Systems Sep. 2013 - Feb. 2014

- Investigated optimal approaches to detect and classify vehicles in traffic surveillance videos

User Adoption of Mobile Application Enhancements Sep. 2013 - Feb. 2014

with Dr.Tam N. Vu (U. of Colorado, Denver) and Dr.Tung Thanh Nguyen (Utah State U.)

- Developed a crawler and database to collect meta-data of Android applications
- Analyzed opinions of users in comments about features of applications.

AGPS-Based Vehicle Tracking Systems Jan. 2012 - Jun. 2012

- Designed a GPS-receiver prototype and software module for client-server communication

Professional Activities

Reviewer, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2017

Teaching and Mentoring Experience

Ulsan National Institute of Science and Technology, Ulsan, Korea

Teaching Assistant, Introduction to Artificial Intelligence

Spring 2014, 2015

- Grade written assignments and programming projects
- Hold office hours to explain materials that student do not understand

Teaching Assistant, Autonomous Robotics

Fall 2015 - Spring 2016

- Mentor students on ROS programming at graduate level

Working Experience

Samsung Vietnam Mobile R&D Center, Samsung Electronics Vietnam Co., LTD. , Vietnam

Field Test Engineer

Jun. 2012 - Feb. 2013

Carried out software and hardware test cases for flagship cellphone models

Technical Skills

- Programming: proficient in C/C++, python, Matlab, GIT, familiar with Unix shell scripts
- Operation systems: Windows, Linux
- Libraries and Toolbox: ROS, OpenCV, Gazebo, VICON tracking system
- Robotics platforms: Arduino, Turtlebot 2, Kuka Youbot
- Applications: L^AT_EX, Photoshop

Leadership Experience

Kinhbac Students' Union, Vietnam

Team leader

Jan. 2009 - Aug. 2009

Managed and monitored volunteer group in contribution to society

- *"Green Summer Volunteer Campaign"*, Summer 2009
Opened summer English classes for children in Caoxa, a rural commune in Bacgiang province.
- *"National Examination Counseling Day"*, Spring 2009
Consulted high school students to prepare for the national university entrance examination

Vietnamese Badminton Club, Korea

Club president

Jun. 2015 - Jun.2016

- Plan, organize and monitor club's activities
- Design and conduct training sections to new members

References

Dr. Vijay Kumar

Nemirovsky Family Dean of Penn Engineering

Department of Mechanical Engineering and Applied Mechanics

University of Pennsylvania

Email: kumar@seas.upenn.edu

Tel.: +1 215-898-3630

Dr. Tsz-Chiu Au

Assistant Professor of School of Electrical and Computer Engineering

Ulsan National Institute of Science and Technology, Ulsan, Korea

Email: chiu@unist.ac.kr

Tel.: +82(52) 217-2138

Dr. Nguyen Quang Dich

Department of Industrial Automation

Hanoi University of Science and Technology, Hanoi, Vietnam
Email: dich.nguyenquang@hust.edu.vn **Tel.:** (+84) 98-632-9918