HUY NGUYEN

PhD Candidate & Robotic Scientist

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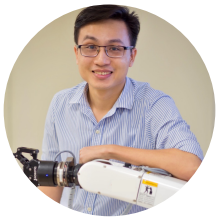


SUMMARY

I am currently a final year research student in the School of Mechanical and Engineering, Nanyang Technological University, under the supervision of Asst. Prof. Pham Quang Cuong. I will have finished my study by the end of July, 2018.
My research interests include intelligent perception; robot-camera calibration; uncertainty in manipulation tasks; integration of 3D perception, tactile perception and compliant control.

RESEARCH PROJECTS

Probabilistic framework for fine assembly

CRI group @NTU

Oct 2017-Now

- We propose a general probabilistic framework to handle system uncertainties, multi-sensor integration, and other related problems.
- To validate the model, we implement our framework in a typical robotic system and perform a highly dexterous task-pin insertion.
- Some functionalities for the framework are open-source and can be found at `python-cope`

Robotic assembly of an IKEA chair

CRI group @NTU

2015–Apr 2018

- We wanted to assess whether, based on state-of-the-art robotic capabilities, it is possible to tackle a typical task that solicits all manipulation skills: the autonomous assembly of an IKEA chair.
- I was involved in doing the calibrations and 3D perceptions for the project. Working on that project, I also came up with a new approach for the hand-eye calibration problem.

Touch-based object localization

CRI group @NTU

May 2017–Sep 2017

This project addressed the touch-based object localization problem in cluttered environments, where outlier measurements could lead to significant loss in precision in existing approaches. The approach consisted of applying RANSAC to a Bayesian estimation framework and of proposing a novel face selection procedure to improve the speed of the measurement likelihood evaluation in the Bayesian updating steps.

Airbus Shopfloor Challenge

CRI group @NTU

Jan 2016–May 2016

- Our team needed to build a light-weighted robot system able to perform drilling tasks with a stringent accuracy requirement.
- I was in charge of the perception part of the system which includes the tool (drill bit) calibration, camera calibration and hand-eye calibration; localization using 3D and 2D camera.
- During that time, we also released the ROS package `ENSENSO`, which acts as a ROS driver for Ensenso 3D cameras.

LIFE PHILOSOPHY

"Tough times don't last. Tough people do."

HONORS AND AWARDS

- **2nd prize at Airbus Shopfloor Challenge**
  ICRA May 2016, Stockholm, Sweden
- **Honda's Young Engineers and Scientists Award-Top 30**
  2012, 2013
- **Intel Vietnam Engineering Scholarship for outstanding academic performance and dedication**
  2012
- **Pony Chung Foundation Scholarship**
  2012
- **GE foundation scholar-leaders program**
  2010-2014
- **Recontres du Viet Nam- Odon Vallet scholarship**
  2010, 2011

STRENGTHS & SKILLS

ROS, openCV, PCL, Python, C++, openRAVE

Hard-working Persuasive Self-motivated

LANGUAGES

Vietnamese
English

EDUCATION

PhD in Perception and Calibration (Robotics)

Nanyang Technological University-Singapore

2014-2018

B.S. in Mechatronics - Top 1/500

Ho Chi Minh City University of Technology (Bach Khoa University)- Viet Nam

2009 – 2014 CGPA: 8.98/10

PUBLICATIONS

Journal Articles

- Nguyen, Huy and Quang-Cuong Pham (2018). "On the covariance of X in AX = XB". in: *IEEE Transactions on Robotics (Conditionally accepted)*. URL: https://goo.gl/yqW2fU.
- – (2016). "Time-optimal path parameterization of rigid-body motions: applications to spacecraft reorientation". In: *Journal of Guidance, Control, and Dynamics* 39(7), pp. 1665–1669. URL: http://www.ntu.edu.sg/home/cuong/docs/TOPPSO3SE3.pdf.

Reports

- Nguyen, Huy (2016). *Motion planning and estimation problems in the space of rigid-body motions SE(3)*. Singapore. URL: https://dinhhuy2109.github.io/files/pdf/QEreport.pdf.

HOBBIES

playing sports | going fishing | trekking |

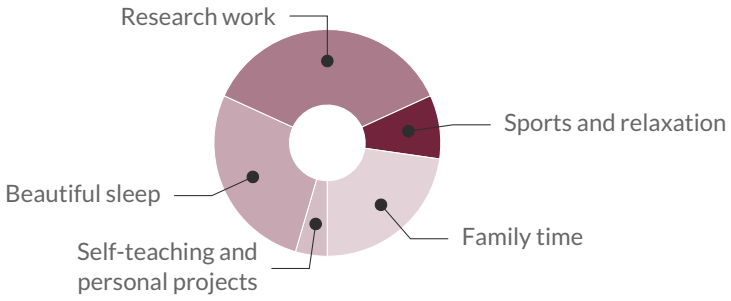
I also love doing some DIY projects like art-threading, light-drawing, etc. in my leisure time.

SOCIAL ACTIVITIES

A member of GE Foundation Scholar-Leader Voluntary group
2011-2015

A member of Dong Hanh Singapore Scholarship Association
2015-2017

A DAY OF MY LIFE



REFEREES

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