DINH VINH THANH NGUYEN

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PROFESSIONAL SUMMARY

Robotics research engineer with a PhD in Robotics, focused on combining model-based and learning-based methods for articulated systems. My experience spans system identification for humanoid and mobile manipulators, reinforcement learning for humanoid locomotion, and task-and-motion planning for multi-agent manipulation, driven by a focus on sim-to-real transfer and physical AI for coordinated robotic systems.

Built Python tools for robot identification and calibration, and developed learning and planning systems for humanoid and multi-agent manipulation.

EXPERIENCE

Robotics Research Engineer Oct 2025 - present
CNRS *Toulouse, France*

- Developing a task-and-motion planning framework for cooperative in-space manipulation missions, with emphasis on multi-agent coordination, motion feasibility, and collision-aware planning in collaboration with Airbus Defence and Space.

Robotics Research Engineer Feb 2025 - April 2025
Maye Entreprise *Paris, France*

- Developed reinforcement learning policies for humanoid locomotion in simulation, targeting stable gait generation and rapid experimentation.
- Built a lightweight simulator for humanoid locomotion experiments to accelerate policy iteration and controller debugging.

Research Engineer Sept 2021 - Oct 2024
Toward S.A.S *Toulouse, France*

- Architected a standardized model-identification framework for sim-to-real transfer, capturing backlash, sensor misalignment, friction, amature, link elasticity, and validated it on the TALOS humanoid and TIAGo mobile manipulator.
- Developed and maintained an open-source Python toolbox for parameter estimation, dynamic identification, and geometric calibration of robots and human models, improving consistency between simulation and real-world behavior.

Mechanical Design Intern Jun 2020 - Aug 2020
Orthopus *Nantes, France*

- Designed and fabricated a 3D-printed test bench for a prosthetic wrist.

Robotics Research Intern Feb 2018 - July 2018
Robotics Lab - Polytechnique Montréal *Montréal, Canada*

- Designed and built a prototype string-based linear actuator for robotic hand actuation.

EDUCATION

Doctor of Philosophy in Robotics Nov 2021 - Dec 2024
L'Institut National des Sciences Appliquées (INSA Toulouse) and LAAS-CNRS *Toulouse, France*

- Thesis: Geometric calibration and dynamic identification methods for anthropomorphic robots

Master of Science in Control and Robotics Sep 2019 - Sep 2021
École Centrale de Nantes *Nantes, France*

- Awarded Elite Scholarship

- Key courses: Control Theory, Optimization, Mobile Robots, Artificial Intelligence

Bachelor of Science in Mechanical Engineering Mar 2015 - Sep 2019
Korea Advanced Institute of Science and Technology (KAIST) *Daejeon, Rep. of Korea*

- Minor: Electrical Engineering
- Full scholarship awarded by Korean Government

SKILLS

Model-based Robotics	System Identification, Manipulation TAMP, Classical Control (PID/LQR/MPC)
Robot Learning	RL (Model-Free/Model-Based), IL (BC/IRL), Real-To-Sim/Sim-To-Real Transfer
Software & Simulation	Python, Pytorch, C++, ROS2, Git, Docker, Gazebo, Isaac Lab, MuJoCo
Languages	Vietnamese, English, French, Korean

SELECTED PUBLICATIONS

- Thanh D. V. Nguyen et al., "FIGAROH: A Python Toolbox for Dynamic Identification and Geometric Calibration of Robots and Humans," 2023 IEEE-RAS 22nd International Conference on Humanoid Robots (Humanoids), Austin, TX, USA, 2023, pp. 1-8.
- Thanh D. V. Nguyen et al., "Improving Operational Accuracy of a Mobile Manipulator by Modeling Geometric and Non-Geometric Parameters" 2024 IEEE-RAS 23rd International Conference on Humanoid Robots (Humanoids), Nancy, France, 2024, pp. 965-972.