

Toan-Khoa Nguyen (Niko)

CONTACT INFORMATION	Phone: (+84) 853 56 57 76 Email: toankhoabk@gmail.com Linkedin: www.linkedin.com/in/toankhoa GitHub: ntkhoa95.github.io
EDUCATION	National Taiwan University of Science and Technology , Taiwan 8/2020–7/2022 Master of Science in Electrical Engineering <ul style="list-style-type: none">• Research Interest: Image Processing, Computer Vision, Image Segmentation• Advisor: Professor Chung-Hsien Kuo and Professor Shun-Feng Su• Thesis: “Normal Surface and Road Obstacle Detection by Discrepancy Network based on RGB-D Data”• Overall GPA: 4.26/4.3 Ho Chi Minh University of Technology , Vietnam 2013–2018 Bachelor of Automotive Engineering
RESEARCH EXPERIENCE	Autonomous & Soft Robotics Laboratory , National Taiwan University 8/2020–7/2022 <ul style="list-style-type: none">• Research Topics: Segmentation technologies for Autonomous mobile robots• Skilled gained: Developing self-supervised learning methods for drivable area and road anomalies segmentation. Providing automatic system to generate segmentation labels for drivable area and road obstacles. Training the self-supervised labels with semantic segmentation neural networks to perform robust prediction in real-time on mobile robots. Developing discrepancy networks for RGB-D data to detect unknown objects on the road to have better navigations for driving.
RESEARCH INTERESTS	My current research focuses mainly on Semantic Segmentation applications on mobile robots, in which utilizing various techniques from traditional image processing to taking the advantages of deep learning methods to develop an efficient automatic labeling method. In addition, I applied multiple attention-based methods to enrich feature maps in fusing the RGB-D input data to enhance the performance self-supervised learning system.
PUBLICATIONS	<ul style="list-style-type: none">• Toan-Khoa Nguyen*, Phuc Thanh-Thien Nguyen, Dai-Dong Nguyen, Chung-Hsien Kuo. Effective Free-driving Region Detection for Mobile Robots by Uncertainty Estimation Using RGB-D Data.<ul style="list-style-type: none">◦ <i>MDPI Sensors</i> 2022, Volume 22, No. 13 (IF: 3.576)• Minh-Quang Tran, Meng-Kun Liu, Quoc-Viet Tran, Toan-Khoa Nguyen*. Effective Fault Diagnosis Based on Wavelet and Convolutional Attention Neural Network for Induction Motors.<ul style="list-style-type: none">◦ <i>IEEE Transactions on Instrumentations and Measurement</i> (IF: 5.592)• Ming-Hong Hsu, Phuc Thanh-Thien Nguyen, Dai-Dong Nguyen, Toan-Khoa Nguyen*, Chung-Hsien Kuo. Fabrication and Image Servo Tracking Study of a Continuum Robot Prototype.<ul style="list-style-type: none">◦ <i>International Journal of iRobotics</i>, 2021, Volume 4, No. 2
HONORS AND AWARDS	<ul style="list-style-type: none">• Phase 1 Finalist, OpenCV AI competition 2021• Full Scholarship of National Taiwan University of Science and Technology 2020

TECHNICAL
SKILLS

- *System:* Windows, Linux
- *Programming Languages:* Python, MATLAB
- *Framework:* OpenCV, Tensorflow, Pytorch, Git

OTHER
ACTIVITIES

- **Teaching Assistant** at IoT Programming and Practice Course
 - Instructor: Professor [Minh-Quang Tran](#)
- **Teaching Assistant** at Fundamental of Self-Driving Cars Course
 - Instructor: Professor [Shu-Hao Liang](#)

LANGUAGES

- Vietnamese: Native
- English: Proficient (IELTS Overall 6.0)

REFERENCES

Dr. [Chung-Hsien Kuo](#)

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President, Robotics Society of Taiwan (RST)/ 台灣機器人學會理事長
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