Tri Bien Minh

Portfolio: triknight.github.io
Github: github.com/triknight

Email: nvn.bienminhtri@gmail.com
Research Gate: Tri-Bien
Address: VietNam

Education

- **Karlsruhe University of Applied Sciences** — Germany
  M.Sc in Mechatronics System and Sensor Technology; German GPA: 1.6 (Percentage: 90% - Good) — *Mar 2017*
  - ***Thesis: Design, Modeling and Control an Octocopter (Grade Percentage: 100 % - Excellent)***
  - ***100% Full tuition scholarship***

- **Lac Hong University** — Vietnam
  B.Sc in Mechatronics Engineer; GPA: 7.97/10.0 (Top 5% students in class) — *2013*
  - ***Team leader a university robot team in ABU Robocon, a robotic competition for Asia pacific universities from 2011-2013***
  - ***Second prize in Nation Robocon Techshow competition with project Humanoid personal assistant robot in 2012***

Experience

- **Vietnamese German University** — Vietnam
  Robotics Lab Engineer (Full-time) — *Oct 2017 - Present*
  - **Managing VGU's Robotics Lab & support research activities**: Maintain and manage laboratory equipment, materials, and computer systems through regular service and repair. Work on assigned research projects in the fields of Robotics, Computer Vision, Embedded Systems, and Machine Learning.
  - **Research on Vision-based control and SLAM**: Working on position-based visual servoing (PBVS) for multiple industrial robotic arms. Execute, benchmark and explores novel SLAM algorithms for an autonomous robot, toward developing a novel semantic SLAM. Execute and develop ML models for object detection, and object classification, with various input data like rgb-image and point-cloud.
  - **Integrate and execute autonomous robot hardware for robotic systems**: including guiding the technical approach and managing the development of the autonomous system on available robots platform: UR10e, KuKa Youbot, Turtlebot3, NAO, DJI Drone, as well as developing new autonomous robots platform.
  - **Lab tutorial & supervise students in topics**: Embedded intelligent System (ROS, OpenCV), Robotics and Autonomous Systems (ROS, Pytorch), Smart Systems in Automation (Python, UR PolyScope), Microcontroller (Atmel Studio), Digital Signal Processing (MatLab), Robotics Workshop (CAD and PCB Design).

- **Nguyen Tat Thanh University** — Vietnam
  Lecture of Mechatronic Department — *Nov 2013 - Jun 2017*
  - **Prepared & delivered lectures to undergraduate students**: on topics of mechatronics and robotics.
  - **Designed robots, machines & teaching kit for education purposes**: Upper body humanoid robot (14-DoF), Ant-like robot (23 DoF), RC Humanoid robot (19 DoF), PLC-Modular Production Station, 3-Axes CNC Machine.
  - **Administration work**: monitored undergraduate teaching, internship, and supervised robotics projects and machine designed for undergraduate students.

- **Robert Bosch Engineering and Business Solutions** — Vietnam
  Intern. Mechanical Engineer — *Feb 2016 - Aug 2016*
  - **Designed the charger docking and locking mechanism for the electric motorbike**: in the "Bosch Green Challenge project", and got awarded "Certification of Innovation Activities and Development" for this design.

- **Pepperl and Fuchs Co., Ltd.** — Vietnam
  Intern. Process Engineer — *Oct 2015 – Dec 2015*
  - **Implemented PDCA (Plan-Do-Check-Action) process**: for ultrasonic welding sensors, and improvement of quality sensors in the manufacturing process. Designed a new kind of machine, and planned some automation processes.

Publications

- **Position-based Visual Servoing with Dual Manipulators (ongoing project)**. Tri B. Minh*, Poster
- **MiniRos: an autonomous UGV robot for education and research**. Tri B. Minh*, H. Thanh Luan, D. X. Phu, T. Quang Nhu and B. M. Duong, *2021 International Conference on System Science and Engineering (ICSSE) pp. 170-175*, DOI: 10.1109/ICSSE52999.2021.9538463.
- **Development of a novel V-frame Octocopter: Design, Kinematic Analysis, and Simulation using PID controllers with Ziegler Nichols tuning method**. Tri B. Minh*, Hien Vo, Hua Thanh Luan, *International Journal of Intelligent Unmanned Systems 2021* DOI: 10.1108/IJIUS-08-2021-0087.
- **Robot Gesture Control Using Online Feedback Data with Multi-Tracking Capture System**. Khang Hoang Vinh Nguyen, Tri Bien Minh, Van Chi Le and Phu Xuan Do *The 7th International Conference on Advanced Engineering - Theory and Applications AETA 2022 pp. 121-130*, ISBN 1876-1119.
- **Adaptive Optimal Control for Upper Exoskeleton following Saturation Function**. Do Xuan Phu, Tri B. Minh, *2021 24th International Conference on Mechatronics Technology (ICMT)*, DOI: 10.1109/ICMT53429.2021.9687228.

Honors and Awards

- Best Junior Researcher Adward in Vietnamese German University - Academic year, 2020-2021
- 100% full tuition scholarship (Pepperl+Fuchs scholarship) - in Master course, 2015-2016
- Global Entrepreneurship Training under the Global Entrepreneurship Education Program (GEEP), 2017
- Youth exchange JENESYS 2.0 Scholarship (JICA 2014) - Japan, 2014
- Second prize in Nation Robocon Techshow competition with project Humanoid personal assistant robot, 2012

Skills Summary

- **Programming**: Python, C++, MatLab
- **Frameworks**: ROS, Pytorch, TensorFlow, OpenCV, Open3D, Isaac Sim, OpenAI-Gym
- **Tools**: Software (Git, Docker), PCB Design(KiCad), 3D CAD Design(Solidworks)
- **Platforms**: MacOS, Linux, Windows, Arduino, Nvidia-Jetson, Raspberry Pi
- **Languages**: English: Professional Working Proficiency, Vietnamese: Native
- **Soft Skills**: Leadership, Event Management, TeamWork, Writing, Time Management

Certificate

- **TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning** — Coursera
  Credential ID: C6WDSPX7BKVH — *Nov 2021*
- **Convolution Neural Network in TensorFlow** — Coursera
  Credential ID: JFFHZFB8QZEF — *Nov 2021*
- **Natural Language Processing in TensorFlow** — Coursera
  Credential ID: PRNTD5GJ9G5C — *Nov 2021*
- **SIMATIC S7-1500 Programming 1 in The TIA Portal (TIA-PRO1)** — Siemens
  Programming PLC S7-1500 with TIA Portal — *Oct 2020*
- **Deep Reinforcement Learning NanoDegree** — Udacity
  Credential ID: 466QEDKQ — *May 2020*
- **Certification of Innovation Activities and Development** — BOSCH Vietnam
  Docking and Locking for Electric bike in BOSCH Station — *2016*
- **Global Entrepreneurship Training** — Handong Global University
  Entrepreneurship Training — *2017*
- **JENESYS 2.0 Program** — Japan
  Japan-East Asia Network of Exchange for Students and Youths (JENESYS) — *2014*

Volunteer Experience

- **Founder at Robotlab facebook and website** — Binh Duong, Vietnam
  Conducted online and offline technical STEM training for students — *Jan 2019 - Present*
- **Member at Jenesys 2.0 (Japan-East Asia Network of Exchange for Students and Youths)** — Japan
  Students exchange programs that are intended to create a bridge between Japan and country in Asia — *Jan 2014*
- **Team Leader at a Robocon ABU(Asia-Pacific Robot Contest) university team** — LHU, VietNam
  Technical lead, facilitating open communication, encouraging member growth to reach the team goals — *2011 - 2013*

Hand-on Hardware Experiments

- **Robot platform**: UR10e, Kuka Youbot, Turtlebot 3, NAO, DJI Drone ..
- **Sensor**: Velodyne, IMU-Xsens, Houkyo Lidar, Intel Realsense, SICK Lidar-Camera, Torque-Force Sensor..
- **Embedded Computer**: Nvidia Jetson family, Raspi-Pi, NUC, Arduino..
- **Actuator**: Various of Servo motor, BLDC Motor, Linear motor, Motor driver,..