MINH HOANG NGUYEN

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ACADEMIC BACKGROUND

Doc. **Doctor of Technology, University of Turku**
05/2023 - present

Position: **Teaching assistant - Doctorate researcher.**

- Teaching assistant, VHDL System Design.
- Conduct research in hardware/software co-design and AI-accelerator hardware.
- Supervise MSc. Thesis works related to hardware acceleration.

MSc. (Tech) (diploma & transcript) **Information Technology, Tampere University**
08/2020 – 02/2023

Major: Embedded Systems
Thesis: "Leak detection in water pipeline with machine learning: a case study with Oras intelligent valve" – GPA 3.89/5

BA. (ICT) (diploma & transcript) **ICT, Turku University of Applied Sciences**
Specialization: Embedded Software 09/2016 – 06/2020
Thesis: "Internet-Of-Things applications with hand motion for remote control - A case study on Home automation and Robotic arm" – GPA 4.8

PAST EXPERIENCE

Oras Oy, Rauma 05/2022 – 12/2022
Position, Thesis worker (*certificate*)

- Programming in C with Silabs microcontroller's SDK.
- Pre-process hydraulic data (flow and pressure) collected from a pilot pipeline.
- Train machine learning model to classify abnormal (leakage) data.

TIERS, Turku 12/2019 – 03/2020
Position, Visiting Research assistant / thesis work. (*certificate*)

- Design a smart home automation system with MYO haptic arm band.
- Control Arduino-based robotic arm by mapping IMU sensor data with the recognized gestures by the armband.
- Support other researchers to review related Health monitoring techniques.

LANGUAGES

English: Professional proficiency (B2/C1). **Vietnamese**: Native
Finnish: Elementary level A2.1

PUBLICATIONS & THESIS

WiP work (*)

WiP draft version (attempted for publication to Embedded System Week conference):
https://www.researchgate.net/publication/360963340_Leakage_detection_in_water_supply_pipelines_using_machine_learning

Published Conference papers

[1] M. Nguyen, T. N. Gia, and T. Westerlund, 'EMG-based IoT System using Hand Gestures for Remote Control Applications', in *2021 IEEE 7th World Forum on Internet of Things (WF-IoT)*, Jun. 2021, pp. 911–912. doi: 10.1109/WF-IoT51360.2021.9595957.

[2] Y. Al-Ameri, M. Nguyen, and T. Westerlund, 'FPGA-Based Hardware Acceleration for Deep Learning in Mobile Robotics', in *2024 IEEE Nordic Circuits and Systems Conference (NorCAS)*, Oct. 2024, pp. 1–7. doi: 10.1109/NorCAS64408.2024.10752450.

PRESENTATIONS AND INVITED LECTURES

Paper presentation, "**EMG-based IoT System using Hand Gestures for Remote Control Applications**", *World Forum on Internet of Things 2021*, 06/2021.

PROFESSIONAL AFFILIATIONS

University of Turku, 2023-present
Doctoral researcher, Project researcher, Teaching assistant.

CERTIFICATIONS

Coursera, Deep Learning Specialization
EdX, Foundations of RISC-V Assembly Language, Computer Architecture with RISC-V Industrial Core (RVFpga)
Udemy, Mastering Microcontroller and Embedded Driver Development

TECHNICAL SKILLS AND COMPETENCES

Programming: **C, C++, VHDL**, **Python**, C#, MATLAB
Development: **Vitis/Vivado**, Intel **Quartus Prime**, VSCode
Middleware: Scikit-learn, **Tensorflow-lite**, Pytorch, **ROS/ROS 2** (C++ and Python), RVIZ
Linux OS: **Ubuntu**, Redhat
Embedded OS: **Petalinux** (Xilinx), PYNQ, Zephyr

REFERENCES

Prof. **Tomi Westerlund**, Group: TIERS, Faculty of Technology, University of Turku
Phone: +358 503437684
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Dr. Tuan Nguyen Gia, AI Scientist at Silo AI,
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