Tien V. Nguyen

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Personal Profile

A postgraduate research student in Electrical and Electronics Engineering, having two years of working and research experience in embedded software engineering, robotics, digital signal processing, and machine learning.

Education

University College Cork   *Cork, Ireland*
MSc - Electrical and Electronics Engineering   *May 2022 - Current*
- Full-time Postgraduate Research Student at Embedded Systems Group [site].
- Study Edge Machine Learning, Digital Signal Processing, and Ultra-low Power Embedded Systems.
- **Courses:** Computational Machine Learning, Deep Learning.

Technical University of Munich   *Munich, Germany*
Exchange Student   *Oct 2019 - Apr 2020*
- **Scholarships:** ERASMUS+ Winter Term 2019/20

Hanoi University of Science and Technology   *Hanoi, Vietnam*
Engineer - Control Engineering and Automation   *Oct 2015 - Aug 2020*
- **Minor:** Instrumentation and Industrial Informatics
- **GPA:** 3.37/4.0
- **Cohort Rank:** 9th/155
- **Scholarships:** Merit-based Encourage Learning Scholarships 2015/16

    MANDEVICES Laboratory   *Sep 2018 - Aug 2020*
    Research Student
    - Studied Sensor Technologies (Eddy Current Sensors, Surface Acoustic Wave sensors) and Embedded Systems.

    Student Support Department, Student Union   *Oct 2015 - Mar 2018*
    - Provided study and student affairs support for students.

Work Experience

Vietnam – Korea Institute of Science and Technology   *Hanoi, Vietnam*
Research Engineer   *Aug 2021 - Apr 2022*
- Developed an omnidirectional robot prototype for robotic navigation study [site]:
  - Developed an Actuator Control Software for robot wheels control [source].
  - Developed a Graphical User Interface (GUI) [source].
  - Developed the Safety Management System [source].
  - Designed the electrical system.
- **Skills:** Robot Operating System (ROS), QtCreator.

Viettel High Technology Industries Corporation   *Hanoi, Vietnam*
Embedded Software Engineer   *Nov 2020 - Aug 2021*
- Developed Linux Drivers and board bring-up.
- **Skills:** Linux Device Drivers, Embedded Systems Bootloaders (e.g. Das U-Boot), Yocto Project.

Projects

A real-time and ultra-low power implementation of an AI-assisted sonification algorithm for neonatal EEG [site]   *Cork, Ireland*
University College Cork   *May 2022 - Apr 2023*
- Developed and implemented at ultra-low power a real-time adaptation of an AI-assisted sonification algorithm for neonatal EEG [site].
- Modified and re-trained a Fully Convolution Neural Network (FCNN) architecture with quantization aware using a public dataset. Implemented the 8bits quantized neural network on an ultra-low power microcontroller with a neural network accelerator.
- **Skills:** Real-Time Operating System (RTOS), PyTorch, TensorFlow, NumPy, Analog Devices AI.

Publications

[1] T. Van Nguyen, A. Daly, F. O'Sullivan, S. G. Quintana, A. Temko, and E. Popovici, "A real-time and ultra-low power implementation of an ai-assisted sonification algorithm for neonatal eeg," in *2023 9th International Workshop on Advances in Sensors and Interfaces (IWASI)*, 2023, pp. 313–318. DOI: 10.1109/IWASI58316.2023.10164463.

Skills

C/C++ Embedded C/C++, Standard C++

Python Pytorch, Tensorflow, Numpy

Edge Machine Learning PyTorch, Tensorflow, Analog Devices AI

Digital Signal Processing Digital Filters Design

Real-Time Operating System (RTOS) FreeRTOS

Robotics Robot Operating System (ROS)

Microcontrollers Analog Devices AI Microcontrollers

Linux Linux Device Drivers, Shell (Bash)

Achievements

Oct. 2022 **Team Ranked First in Ireland,** IEEEXtreme Programming Competition 16.0 *Online*

Mar. 2023 **Team Ranked Twelfth,** Irish Collegiate Programming Competition (IrlCPC) 2023 *Cork, Ireland*

Interests

Photography I like taking pictures of urban life, cities, and landscapes.

Astronomy I am an astronomy enthusiast and a member of an astronomy club in Hanoi, Vietnam [site].

Badminton I play for the UCC badminton team.

Languages

English IELTS Academic 7.5/9.0

Vietnamese Native

References

Dr. Emanuel Popovici

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