Minh Nguyen

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I am fond of studying how computers are assembled, from the logic gates up to the complex general-purpose processors or ASIC, thus, Embedded System Engineer is my career path choice. My knowledge about Embedded Systems was much enriched near the end of the Bachelor studies when I started to do extensive research about the advances in the HTI field and compose my thesis. After completing half of my Master program at Tampere University, I have become more equipped with the knowledge and deeper understanding about various branches of Embedded computing such as Signal processing, machinery, process automation, computer engineering, etc. Personally, I have preference towards computer engineering and signal processing, which I find most interesting to study.

My current plan is to gain some experience in the field either from the industry or from researchers and strengthen my understanding from what I have learnt so far about Embedded and related fields such as Communication Engineering.

WORK EXPERIENCE

Embedded system prototyping with ATMEGA328P
a Microcontroller's project
02/2021 – 05/2021 **Tampere, Finland**

- Utilize multiple modules of the Atmega328P to formulate the basic functionality block of the heating control system and an audio synthesizer.
- PCB Layout and hardware components schematic are documented with Proteus 8, which also simulate the system with conditioned settings.
- Programming and debugging are done with Atmel studio.

Real-time system simulation with PYNQ-Z1
Collaboration with Wapice
09/2020 – 12/2020 **Tampere, Finland**

- Boot a custom GNU Linux distribution built with Yocto
- Develop a kernel driver to support the custom IP, eventually tweaking it for real-time application.
- Use Yocto to generate a SDK to develop and cross-compile user-land applications for the project.

Bachelor Thesis project (*submitted as student paper IEEE's IoT 2021*)
01/2020 – 04/2020 **Turku, Finland**

- Read sEMG and IMUs data from Myo armband from gateway device for filtering and categorizing different hand gestures.
- Utilized MQTT protocol to bridge connection with microcontroller to remotely control robotic arm.
- Implemented gesture-based appliance control with HassIO.

Visiting research assistant,
Turku Intelligent Embedded & Robotic System (TIERS)
12/2019 – 03/2020 **Turku, Finland**

- Built a smart system for controlling actuators based on EMG signals received from Myo haptic band.
- Additionally signals such as accelerations, angular velocity, in combination with EMG from the wearable sensors mapped with different control motions of a robotic arm.
- Support senior researchers their continuing research with Health monitoring systems.

Competence track project,
09/2019 – 02/2020 **Turku, Finland**
Project: Home Assistant with Raspberry Pi

- Installed HassIO as home assistant service on Rasperry Pi 4.
- Logged motion sensing, room temperature and humidity data on webUI collected via SPI bus with Arduino UNO.
- Reconfigured automated control with in-door home appliances (room heater, lamps).

Front-end web developer, theFIRMA & Urbanzee
6/2018 – 11/2018 **Turku, Finland**

- Co-designed, co-developed and implemented a prototype mobile web-App in a team with the project owner.
- Used React/Redux, Semantic UI, and related software packages for building user interface.
- Integrated with Django API on the frontend to display relevant data.

SKILLS AND TRAININGS

Domain skills

- Embedded software, IoT systems design, Back-end development, HCI Research, Robotic application

IT skills

- Microsoft Office, Proteus, Qt, Visual Studio, Embedded Linux, MATLAB.

Programming

- Python, Embedded C, C++, React/Redux

Training

- TIERS, SparkUp Turku, theFIRMA

EDUCATION

Master of Science, Information Technology (on-going)
(Major - Embedded Systems)
Tampere University, Finland
08/2020 – Present ***ETCS credits 71/120, CGPA: 3.81***
Courses

- Embedded Systems: Introduction to Embedded Systems, Digital Design, Logic Synthesis, Microcontroller, Real-Time Systems, Concurrency, Programming 3: Techniques (C++), Parallelism
- Minor - Communications and Networking: Communication Theory, Basic course on Wireless Communication

Bachelor of Information Communication Technology
Turku University of Applied Sciences, Finland
09/2016 – 06/2020 ***ECTS 264/240***

- GPA: 4.5

ERASMUS exchange
Hamburg University of Applied Sciences, Germany
01/03/2019 – 31/07/2019 *ETCS 30*
Courses
Programming Microcontroller, Digital Systems, Software Engineering, Electrical Engineering 2, X-rays without X-rays - Simulation (Elective Project).

ACHIEVEMENTS

Tampere University tuition fee scholarships
(08/2020 – *12/2022*)
Awarded Tampere University tuition fee scholarship, which covers 100% of tuition fees for two academic years.

ERASMUS grant for international exchange
(03/2019 – 07/2019)
Awarded student grant for international exchange program ERASMUS, covering average living cost during study period in Hamburg HAW.