



After the Mobility

Table D - Traineeship Certificate by the Receiving Organisation/Enterprise

Name of the trainee: Attila Miklós Ámon
Name of the Receiving Organisation/Enterprise: Siemens Industry Software NV
Sector of the Receiving Organisation/Enterprise: computer software and technology company focused on industry, infrastructure, transport and healthcare.
Address of the Receiving Organisation/Enterprise [street, city, country, phone, e-mail address], website: Interleuvenlaan 68, 3001 Leuven (Heverlee) – Belgium; www.siemens.com
Start date and end date of the complete traineeship (incl. virtual component, if applicable): from [day/month/year] 01/07/2023 to [day/month/year] 31/08/2023 Start date and end date of physical mobility: from [day/month/year] 01/07/2023 to [day/month/year] 31/08/2023
Traineeship title: Real-time spike detection
Detailed programme of the traineeship period including tasks carried out by the trainee: The student has implemented a spike detection algorithm on a real-time processing board (STM32 microcontroller) and validated the method on a small-scale demonstrator setup, i.e., an autonomous driving RC car controlled by a Raspberry Pi.
Knowledge, skills (intellectual and practical) and competences acquired (achieved Learning Outcomes): The student learned state-of-the-art algorithms for spike detection, peak finding and wavelet transformation. He made C/C++ implementations of these algorithms to be able to run them in real-time on a microcontroller. The implementation was validated on a small-scale demonstrator setup, i.e., a modified remote-controlled car which was controlled by a Raspberry Pi. The student implemented the control scripts in python and used the on-board IMU sensors for validation of the spike detection methods. The results were reported by the student through weekly progress meetings, by a final presentation at the end of the internship, and by technical documentation which the student provided with his developed code.
Evaluation of the trainee: The student successfully performed the tasks and objectives of the project. He was able to perform this in an highly autonomous manner, taking initiative himself when facing technical obstacles during the project. This was highly appreciated. With regards to the demonstrator setup, the student also collaborated well with engineering specialists within Siemens in order to resolve some unforeseen technical issues, such that a working setup was achieved. The final results were presented in a final presentation at Siemens (with colleagues from ELTE joining remotely), which was well received.
Date: 11 September 2023
Name and signature of the Supervisor at the Receiving Organisation/Enterprise: Bram Cornelis Research Manager  Digitally signed by Cornelis Bram Date: 2023.09.11 12:19:04 +02'00'