BACHELOR or MASTER INTERNSHIP
Cloud communication with reusable components

INTRODUCTION

VERHAERT has a clear focus on innovation and development of new products for international customers in various sectors. We offer a broad range of product development services, from business consultancy to series production.

By further investing in hardware abstraction and reusable embedded software components, we want to keep improving our embedded software development process.

For our IoT projects we want to create a standard set of components to communicate with cloud service platforms, like AWS and Azure.

Starting from our component-based solution for Azure communication from an ESP32, the challenge is to extend what we have to AWS and to other embedded platforms (e.g., STM32).

Goal of the internship

1. Learn about AWS and Azure.
2. Analyze the existing embedded software components and improve portability.
3. Using our existing software components, create an embedded application for an ESP32 development kit, sending and receiving data to and from an Azure endpoint.
4. Analyze and improve portability of ESP32/Azure software component for other hw/sw platforms (STM32 and AWS)
5. Add components to communicate with AWS and port the functionality to an STM32 development kit.

As an outcome we expect the following:

- Study report.
- Working demonstrator and test setups.
- Successful demonstration of both setups.
- Test report.
- All relevant documentation found or created during the internship.

YOUR PROFILE

- You want to learn about cloud communication and reusability.
- You have a sound knowledge of embedded systems and the C programming language. Python is a plus.
- You have what it takes to perform independent research and out of the box thinking.
- You like to make a working prototype, improving and elaborating on a first demonstrator.

OUR OFFER

Apart from learning about cloud communication, and reusability, while using it in practice, we offer you a view within an inspiring and innovative company, a very pleasant atmosphere and professional coaching.

COACH

Kris Winckelmans

Software Tech Lead Embedded Lab
kris.winckelmans@verhaert.com