

PEPPER UNDER CONTROL: PROGRAMMING CONTROL & AUTONOMOUS BEHAVIOUR

Pepper is the world's first social humanoid robot able to recognize faces and basic human emotions. Pepper was optimized for human interaction and is able to engage with people through conversation and his touch screen.

This is how Softbank Robotics, Pepper's creators, advertise it. Indeed, it is a humanoid robot (1.20 m high), it has plenty of sensors to inspect its environment (infra-red, ultrasound, cameras, microphones) and actuators to make it act and move. It also has several modules for detecting faces and emotions. The School of Creative Technology has bought a Pepper as a testbed for research and education. With all its functionality, it's not even close to being complete, and this is where you come in to deliver the next step.

The research group (lectoraat) Ambient Intelligence focuses on making environments smart, especially in the domains of safety, sport and smart industry. We have guided several student projects revolving around Pepper, and now we want to take things to the next level. Several parties have contacted us to make a software solution that makes Pepper easier to use, and to include autonomous behavior in a more intuitive way.

TASK DESCRIPTION

Based on the experience with previous student projects with Pepper, we now need some dedicated work to be done to take things to the next level. We want you to:

- Develop a software solution (desktop client, possibly Android app) that provides easy manual control of Pepper's functions, and with which data on interactions can be gathered and stored.
- Validate this solution and make it open source;
- Investigate the design of behavior for open days and experiments on human-robot interaction;
- Investigate frameworks for autonomous behavior (for example, Google DialogFlow);
- Integrate the solution with Saxion services (connecting to the network).

So do you want to work with a robot with a mind of its own, make it more intelligent, design a pleasant user experience for interaction, and provide an open source contribution to the world? Then join us!

PRACTICAL INFORMATION

- **Student profile:** HBO-ICT SE, intern or graduate student; knowledge of Python is a plus.
- **Duration:** February 2020 – July 2020.
- **Compensation:** 230 euro per month (before taxes) when carrying out this assignment at Ambient Intelligence.
- **Contact person:** for more information, contact Jeroen Linssen (j.m.linssen@saxion.nl).
- **More information:** saxion.nl/ami

