# Diploma Thesis

# Smart Home Gateway Voice Assistant

## Project Description

AI-powered digital assistants are becoming more and more popular. They are integrated in almost all modern smart phones and lately big companies like Amazon, Google and Apple also provide stand-alone solutions for home use. At the same time, components that make up such assistants become available for utilization by developers.

This thesis covers the development of a voice assistant for the COYERO connected gateway. Focus is on integration of components necessary for basic functionality. These include hardware parts e.g. for audio input/output, local software modules e.g. for hot word detection and cloud services e.g. for speech recognition and natural langue understanding.

## Your Responsibilities

- Gain knowledge about existing voice assistant technologies (e.g. Apple Siri, Amazon Alexa, IBM Watson)
- Obtain overview about existing components for voice assistants (e.g. Amazon Polly text-to-speech service, Watson developer cloud)
- Design voice assistant for basic functionality (e.g. switching lights) based on existing components
- Implement voice assistant for CISC internal COYERO® connected gateway platform

## Mission

- Acquire knowledge about voice assistants and their components (wake word detection, speech recognition, natural language understanding, command execution, text-to-speech conversion)
- Design and implement a voice assistant with basic functionality (e.g. switching lights) for the CISC internal product COYERO® connected gateway
- Documentation

**Location:** Graz
**Experience Level:** Student
**Education Level:** Bachelor degree/ Master Studies
**Duration:** 6 Months
**Payment:** CISC will pay a optional one time success fee of EUR 1.650,-- at the end of the thesis for outstanding results.

If you are interested in this opportunity, please apply via **www.cisc.at/career** or directly contact **DI Manfred Jantscher m.jantscher@cisc.at** and **Ass.Prof. Dipl.-Ing. Dr.techn. Christian Steger steger@tugraz.at** with a letter of motivation and your resume attached (preferably in Word or PDF format).

## Company Description

CISC Semiconductor GmbH is a design and consulting service company for industries developing embedded microelectronic systems with extremely short Time-To-Market cycles. Our core competences are: System design, modeling, simulation, verification and optimization of heterogeneous embedded microelectronic systems with a particular focus on Automotive and RFID systems. Our customers are coming from Semiconductor, Automotive, and RFID industry.

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