Table of Contents

Welcome   1

Project Willy

- History of Willy

- Project Willy

- Publicity

- Sponsors

Getting started

- Introduction to ROS

- Development Guide

- Driving Willy

- Manual

- Wiki Manual

Build of Willy

- Design history

- Hardware

Architecture

- Software Architecture

- ROS topic design

Raspberry Pi's

- Sensor node

- Social Interaction node

- Power node

Components

- ROS master

- New ROS master on Lubuntu

- Sonar

- Lidar

- Kinect

- Localization and navigation

- Motor controller

1. Speech recognition

Listening to speech is located on the SI node and is done with a Python script. The script is published at the Github location: https://github.com/Windesheim-Willy/speech_recognition/blob/master/start_recognition.py . Two essential services are used:

- Speech recognition (speech to text conversion) of Google through the use the module speech_recognition

- Fuzzy logic search option through the use of the module fuzzywuzzy

2. Flow

The general flow in the script is as follows:

- The neccesary modules are imported

- The hit ratio used for fuzzy logic resemblance is set

- Two topics are set for publishing

- Speech is captured through the microphone

- Speech is transferred to Google for translation in clear text in Dutch

- Text is published on topic /interaction/clear_text

- Text is compared with fuzzy logic to keywords, when hit the number 1 is published on topic /interaction/is_active