

A Verbal and Graphical User Interface Tool for Speech-Control of Soccer Robots in Ghana

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Abstract

SMILE (Smartphone Intuitive Likeness and Engagement) application, a portable Android application that allows a human to control a robot using speech input. SMILE is a novel open source and platform independent tool that will contribute to the robot soccer research by allowing robot handlers to verbally command robots. The application resides on a smartphone embedded in the face of a humanoid robot, using a speech recognition engine to analyze user speech input while using facial expressions and speech generation to express comprehension feedback to the user. With the introduction of intuitive human robot interaction into the arena of robot soccer, we discuss a couple specific scenarios in which SMILE could improve both the pace of the game and autonomous appearance of the robots. The ability of humans to communicate verbally is essential for any cooperative task, especially fast-paced sports. In the game of soccer, players must speak with coaches, referees, and other players on either team. Therefore, if humanoids are expected to compete on the same playing field as elite soccer players in the near future, then we must expect them to be treated like humans, which include the ability to listen and converse. SMILE (Smartphone Intuitive Likeness and Engagement) is the first platform independent smartphone based tool to equip robots with these capabilities. Currently, humanoid soccer research is heavily focused on walking dynamics, computer vision, and intelligent systems; however human-robot interaction (HRI) is overlooked. We delved into this area of robot soccer by implementing SMILE, an Android application that sends data packets to the robot's onboard computer upon verbal interaction with a user.

Biography

Dr. Patrick fiati is the ceo of romapak ltd. Dr. Patrick fiati is also a lecturer at cape coast technical university. He teaches telecommunications and computer operating systems at the electrical/electronic engineering department. His research cuts across all fields. He researched on nasa project on rapidscat and quikscat launch in space. He is part of the oyster research in japan, singapore and south korea. He was recently part of the award nominees in a robotic conference in south korea. He holds a master's and phd in telecommunication engineering

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