Human vs. Machine: Automation for a huge hydraulic Ball-in-a-Maze Puzzle

A fully hydraulically driven giant labyrinth has been set up at ifas as an eye-catching public demonstrator. A ball can be steered by the user through the giant labyrinth using a variety of control devices such as a keyboard, gamepad or even mobile phone app. The concept makes it possible to experience the advantages of hydraulics in a vivid way. Innovative ideas and solutions for hydraulics are also implemented in the labyrinth. For example, the test bench can be controlled via app, image recognition and path planning as preparation for games against the computer are under development, and pump prototypes in additive manufacturing design are under development for the drive.

Up to now, the game has been controlled directly by the player. For games against the computer an automation of the labyrinth is necessary. This should be the subject of this work. Based on image recognition and path planning, the labyrinth is to be enabled to automatically guide the ball to its target. You are very welcome, to make your own advancements for the labyrinth.

You need: fun in programming, control development and the willingness to familiarize yourself with new systems.

We have free coffee in (un)healthy quantities, intensive care and a pleasant working environment.

Got your interest? Then simply inquire, I am looking forward to you!

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