

Wireless Goal Recognition in Foosball

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1 IA Foosball

IA Foosball is the name of the project and startup we developed in the previous semester. It is meant to make foosball more interactive, to show and share statistics, and make it more sociable by using new technologies. The planned services include global and private rankings, table finder, friends, automatic tournaments and more. Because it is part of an university project, we used the latest and greatest technology. The front end is written in Flutter and pReact, the back end is separated in containerized microservices written in Go and all communication is done through gRPC, which uses protobufs and HTTP/2. Figure 1 shows this architecture.

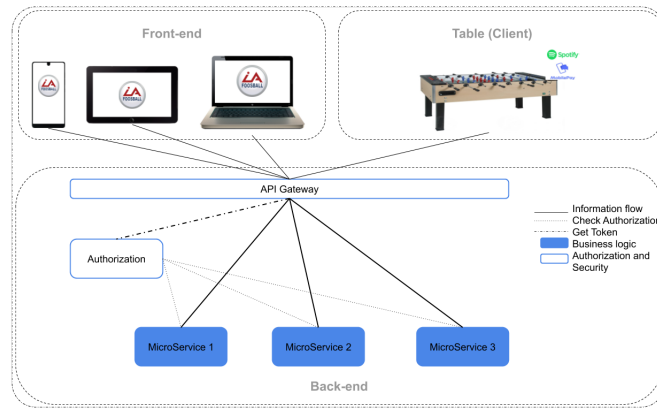


Figure 1: The old IA Foosball architecture

The foosball table in figure 1 is the development version, so it is a fully featured version. This includes, speakers with Spotify integration, LED lights, automatic ball release and a tablet. The software and hardware running on the table is not new not portable, especially concerning the goals. Figure 2 shows the electronics of the old goal setup.

The sensors were directly connected to raspberry pi and a simple javascript application registered the goals and send them to a remote server. This required a

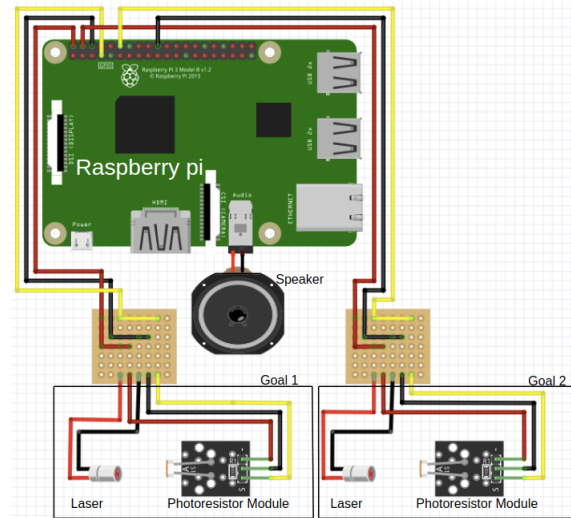


Figure 2: The old IA Foosball goal

power outlet and a raspberry pi on each table. It also required cables from each goal to the raspberry pi. This approach did not scale well. Hence, we re-thought the design, making it more versatile, easier to integrate and manage.

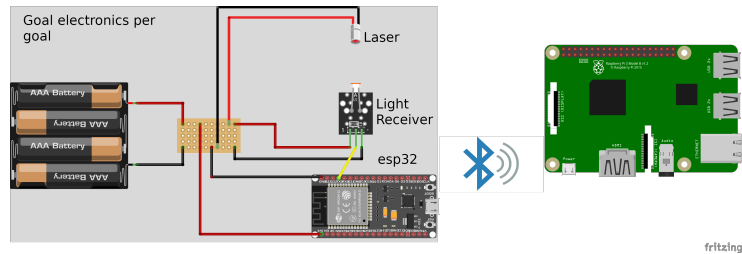


Figure 3: The new IA Foosball goal

Figure 3 shows this new setup. Marked in grey are the components used for each goal. The esp32 (device in the bottom)