Universal IR remote control (Vulcan-Scarlet)

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AIMS

This project is to develop a universal IR remote control system using the nRF52840 DK board and M5Core2. The system will enable users to control various appliances through intuitive hand movements and touch inputs.

Motion Sensing for Control Actions

To effectively capture and interpret user hand movements, the M5Core2's three-axis accelerometer and three-axis gyroscope (MPU6882) will be utilized. These sensors will detect and analyse the motion, allowing the system to accurately determine the user's intended control actions.

Touchscreen User Interface Development

To create an intuitive and user-friendly experience, a user interface will be developed on the M5Core2's touchscreen. This interface will enable users to easily select the appliance they wish to control, ensuring seamless interaction with the system.

Bluetooth iBeacon Communication

To enable efficient communication between devices, Bluetooth iBeacon technology will be implemented for seamless message transmission between the M5Core2 and the nRF52840 DK. This will ensure reliable and fast delivery of control messages.

IR Transmitter Setup

Connect an IR transmitter to the nRF52840 DK board and configure it for universal remote-control functionality.

System Overview

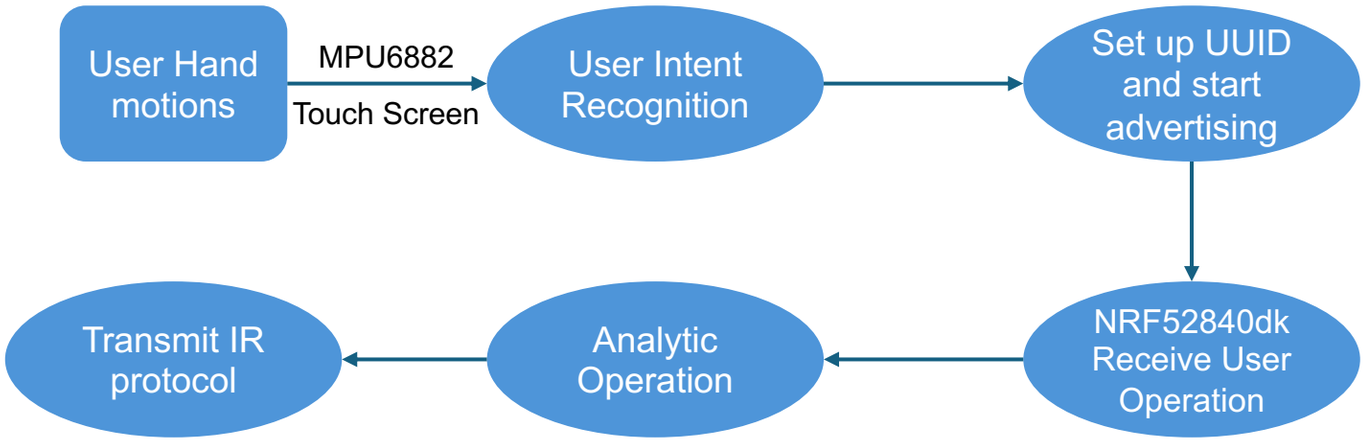

Image generated by ChatGPT

Conclusion

By integrating these components, the project aims to demonstrate a versatile and user-friendly universal IR remote control system. The system will enable users to control multiple appliances effortlessly through intuitive hand gestures and a simple touchscreen interface, showcasing the potential of combining motion sensing and wireless communication technologies in everyday applications.