UR User Interface – Project Description

# Problem

Using the attached tablet running Polyscope it is easy to program robot that are easily accessible. However not all robot are easily accessible and having a tablet directly attached to the controller might be problematic. Luckily, the way the robot communicates with Polyscope is through a socket interface, where the controller acts as the server. This socket interface is open and can be accessed by multiple clients at the same time. All the information and controls Polyscope gives the user is send through this interface, meaning an equivalent program to Polyscope can be created by looking into this interface.  
  
The goal of this project is to start development of a UI that can be run on a PC connected to the same network as the robot.

The first milestone for the UI is to be able to send programs written in URScript to the robot.

The second milestone for the UI is to be able to display some of the robot information to the user. The first step is to be able to display some chosen information in the CLI, whereas the next step is to create a GUI that show the information instead.

# Resources

<https://www.universal-robots.com/articles/ur/interface-communication/overview-of-client-interfaces/>

<https://www.universal-robots.com/articles/ur/interface-communication/remote-control-via-tcpip/>

<https://docs.python.org/3/howto/sockets.html>

<https://realpython.com/python-gui-tkinter/>