

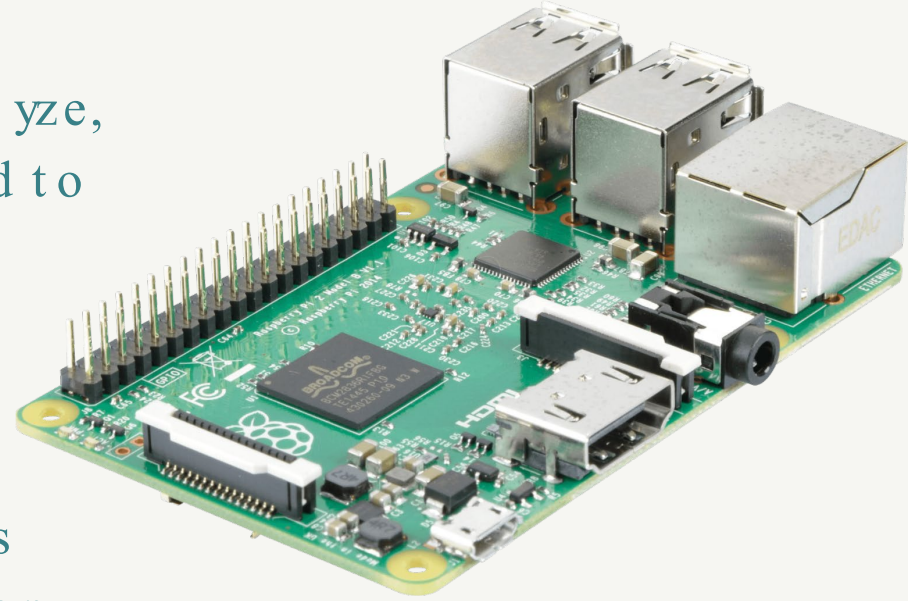
piNet

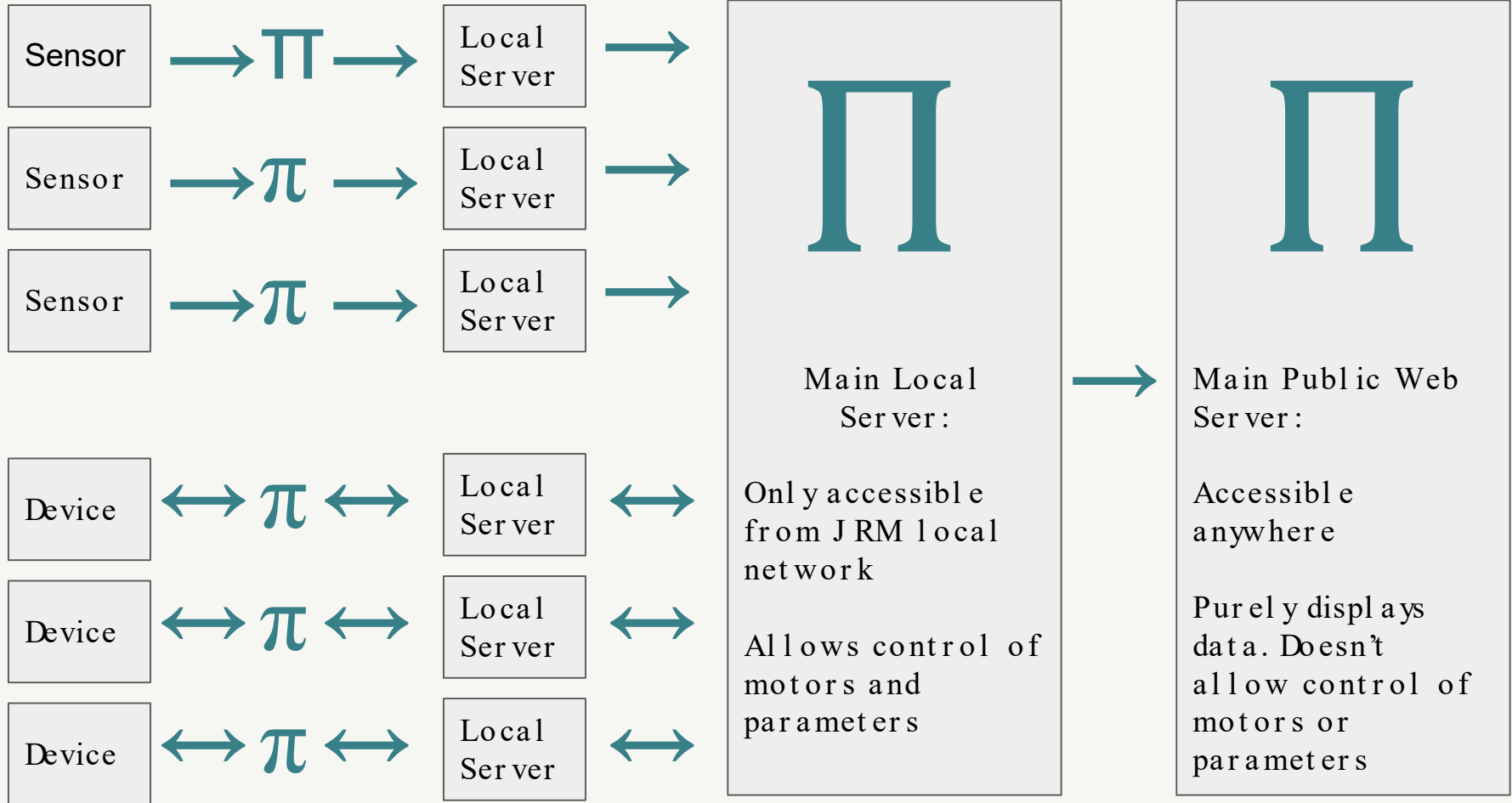


Goal: use a network of raspberry pi microcomputers to collect, log, analyze, and display data taken from JRM, and to control some systems remotely/automatically.

## Examples

- remotely controlled beam blocks
- automatic detection and correction of beam drift
- collection and storage of ambient temperature, humidity, and pressure data
- Alarm detection and email alert system





Sensor



Local Server



Sensor



Local Server



Sensor



Local Server



Device



Local Server



Device



Local Server



Device



Local Server



$\Pi$

Main Local Server :

Only accessible from JRM local network

Allows control of motors and parameters



$\Pi$

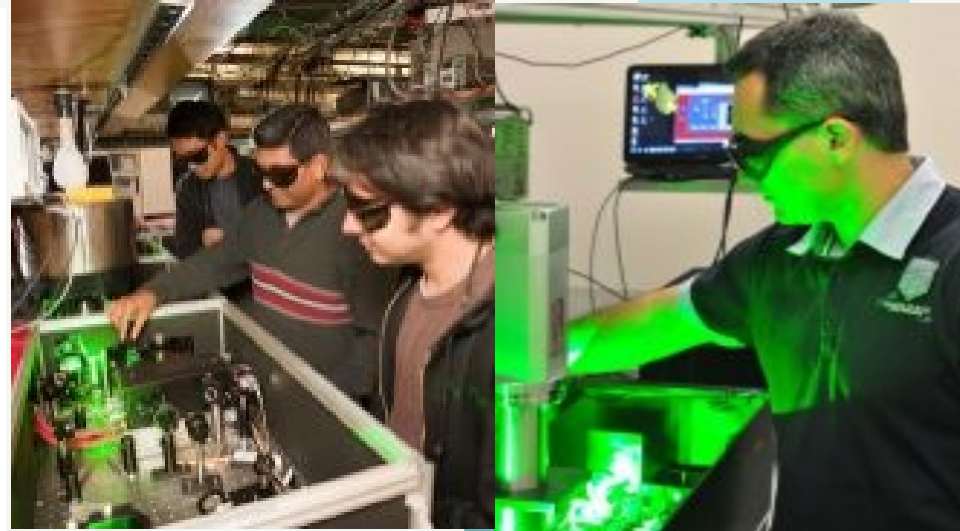
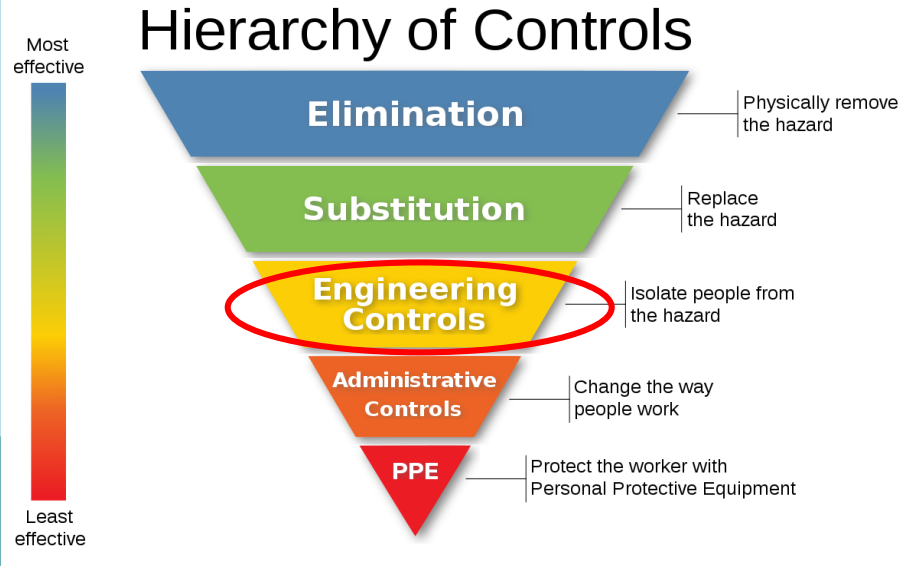
Main Public Web Server :

Accessible anywhere

Purely displays data. Doesn't allow control of motors or parameters

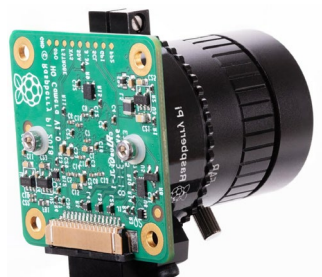


# Justification



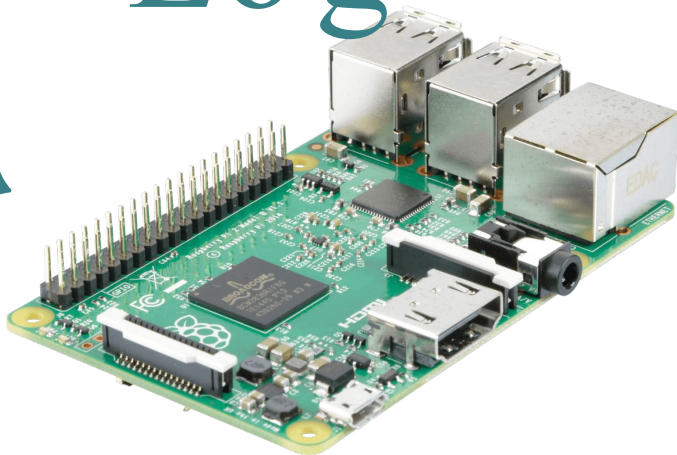
piNet would push many activities at JRM lab from the 'PPE' domain to the 'Engineering Controls' domain. The network would also simply make research more efficient and convenient, and could even allow for research that wouldn't otherwise be possible (such as motoring of laser systems while abroad).

# Collect

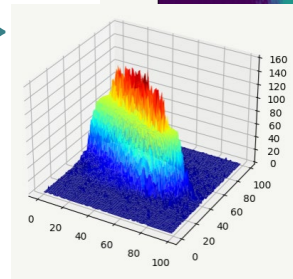
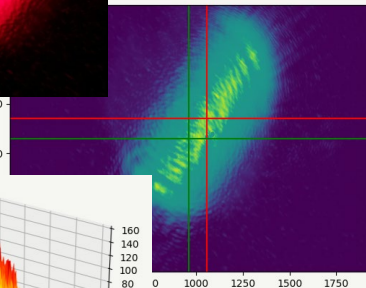
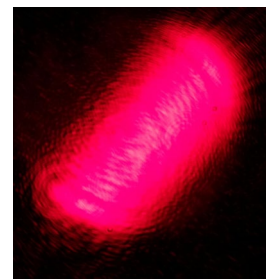


# Control

# Log



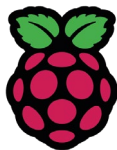
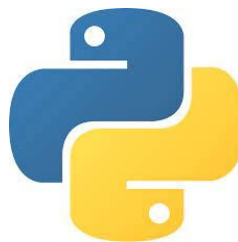
# Display



# Analyze



scikit-image  
image processing in python



RegEx



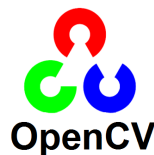
Flask



BeautifulSoup



urllib<sup>3</sup>



# Where does piNet end? Never.

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628620 89986280 348253421170 679821480 8651328230 6647093844609550 5822317253  
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