

Robot Brain – A modular framework for sensor and actuator control

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github.com/jminardi/RobotBrain

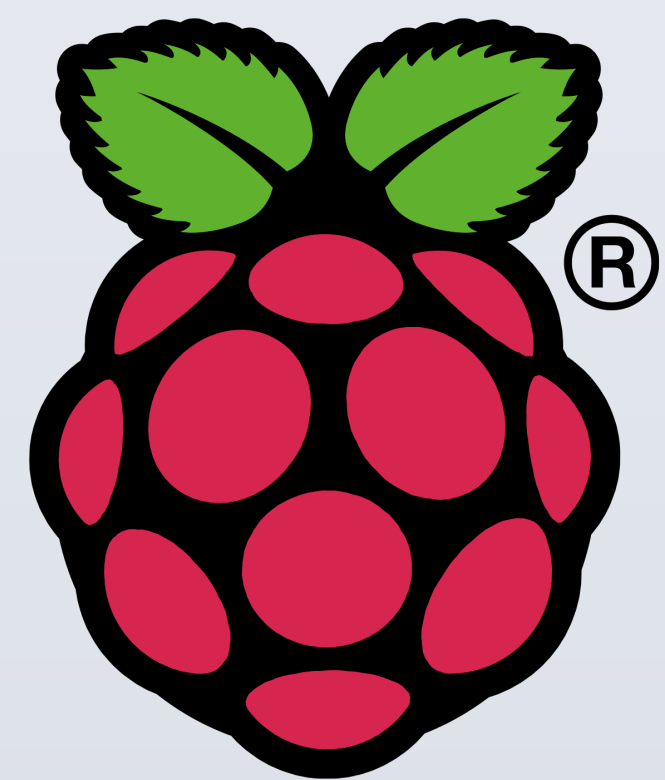
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INTRODUCTION

Collecting data from sensors and controlling actuators is hard. It should be easy. Here I present a modular software framework for using arbitrary sensors and actuators in your applications.

The demonstration uses:

- Raspberry Pi
- Python



OBJECTIVES

- Generic sensor and actuator API
- Easy to implement
- Open Source
- Plug-n-Play
- Teaching tool
- Rapid prototype development

BASIC API

```
class Sensor:
```

```
    range = (0, 1024)
```

```
    num_values = 1
```

```
    def read():
```

```
        """ Return the current
           sensor value.
        """
```

```
    def read_normalized():
```

```
        """ Return the current
           normalized value.
        """
```

```
class Actuator:
```

```
    range = (0, 1024)
```

```
    num_values = 1
```

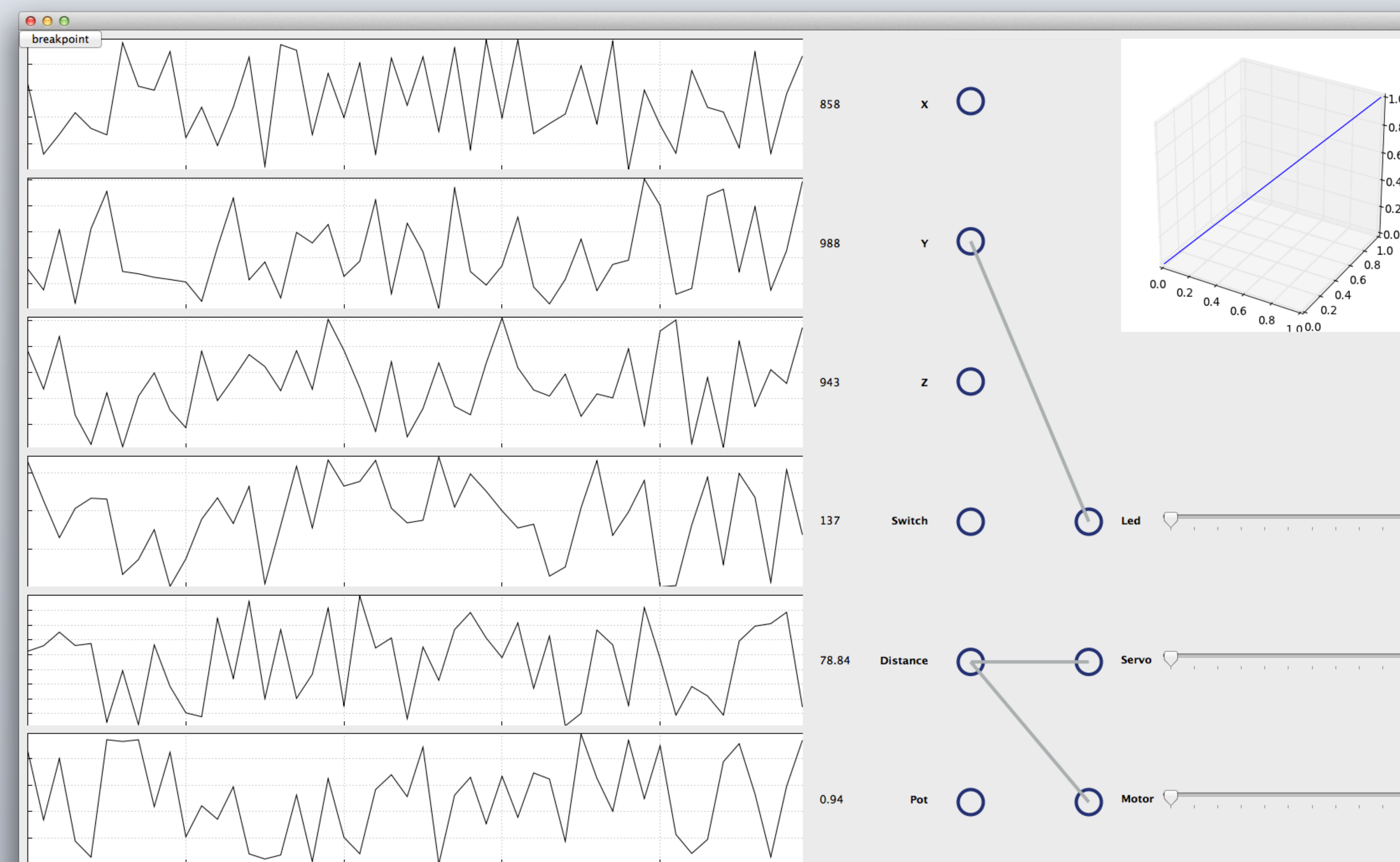
```
    def set(value):
```

```
        """ Set the actuator
        """
```

```
    def set_normalized():
```

```
        """ Set the actuator with
           a normalized value.
        """
```

SAMPLE GUI



Basic GUI on top of a few sensors and actuators

CONCLUSION

The ultimate goal is to build a system that can be easily used as both a teaching tool and a rapid prototype development environment. This early demonstration is a step in that direction but there is still work to be done.

HELP ME!

- Modularizing the hardware.
- Implement more sensors
- Implement more actuators

CONTACT

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