

```
root@BrewbeardEd:~/beard# ./beard.py --help
usage: beard.py [-h] [--full-cycle] [--init] [--reset] [--heat HEAT]
               [--bk-pump BK_PUMP] [--mlt-pump MLT_PUMP]

optional arguments:
  -h, --help            show this help message and exit
  --full-cycle          Run a full cycle test.
  --init               Init the GPIOs.
  --reset              Turn all relays off.
  --heat HEAT         Turn heat on or off.
  --bk-pump BK_PUMP   Turn boil kettle pump on or off.
  --mlt-pump MLT_PUMP Turn mash pump on or off.

Running full cycle test.
Full cycle test complete.
```

Brewbeard Modular Brew Controller

Max Vilimpoc
<https://vilimpoc.org>

Problem

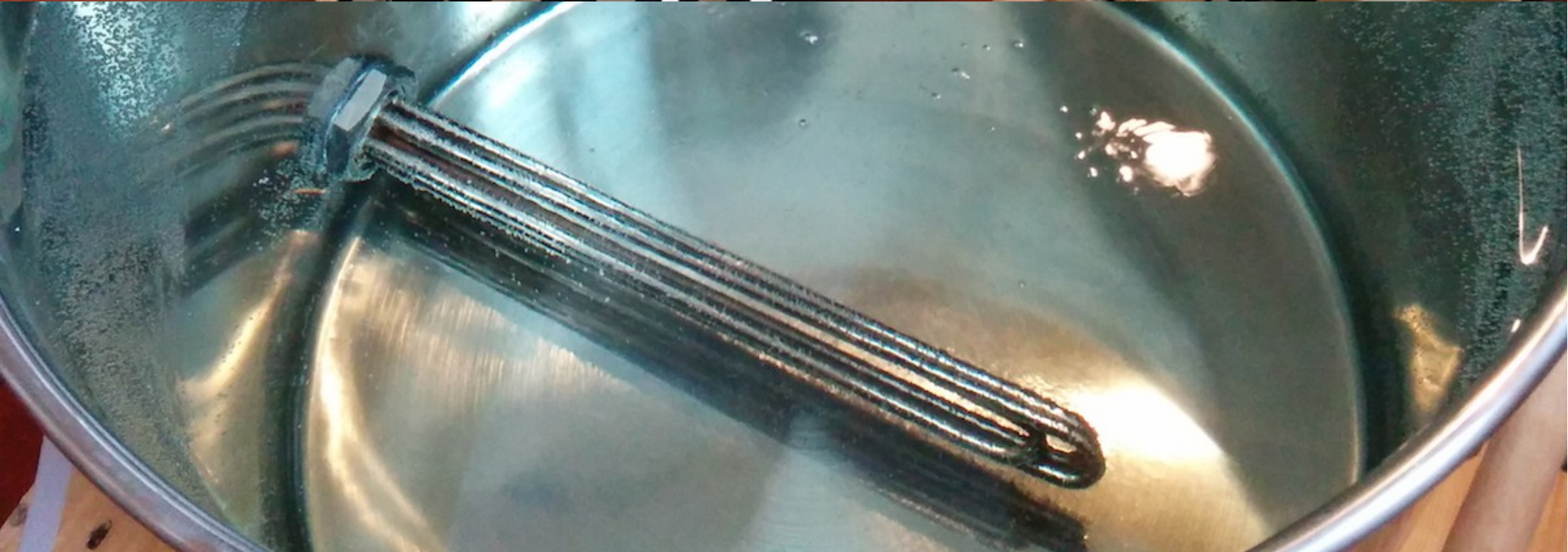
Brewing beer

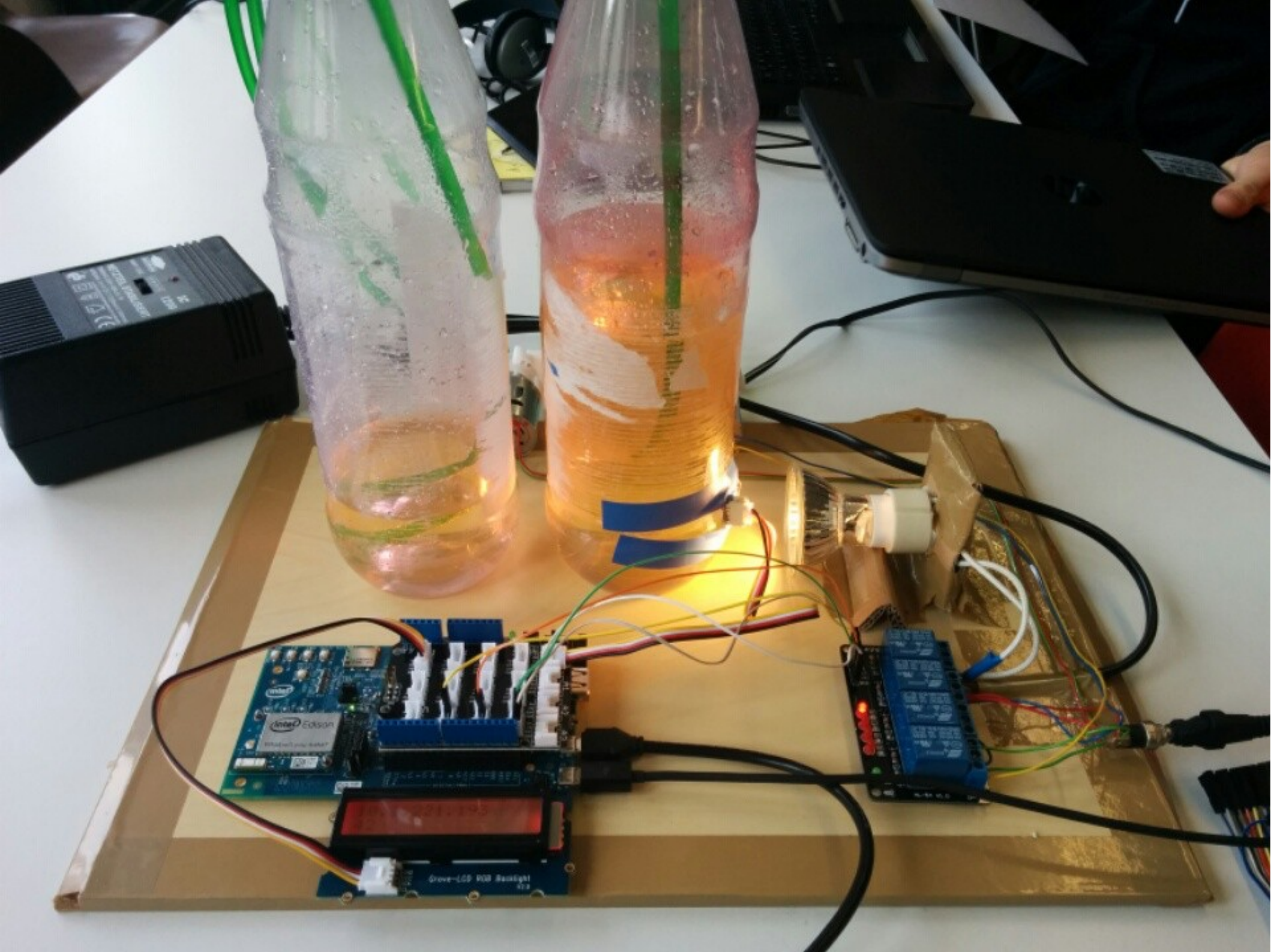
- **Requires precise control of temperature**
- **Benefits from precise control of time**
- **Is data intensive**
- **Needs to be repeatable and consistent from batch to batch**

Solution

Process automation

- **Using IoT processors and sensors brings automation to the home brew process**
- **Temperature sensors provide feedback to heating elements**
- **Relay cards provide power control to pumps**
- **Flow rate and liquid level sensors allow closed loop operation**
- **Alcohol and CO₂ sensors monitor fermentation process.**
- **Data gathering and cloud analytics allow batches and process to be serialized and analyzed**





Intel Edison
Grove-LCD RGB Backlight

Grove-LED RGB Backlight

Power supply unit

Laptop

Demo Time

Questions?

Thanks for listening.