Automated Microbial Analysis Weekly Meeting Notes

11/1/19

* Group Members in Attendance
  + Bendt, Zachary
  + Bruslind, Jorian
  + Hall, Macklin
* Project Unknowns and Risks
  + Can a single Raspberry Pi be used to do image processing AND motor control?
  + Should we include a depression to catch the finished samples?
  + How can we ensure accurate motor movement?
  + Do we need to implement half-stepping in the motors? If so, will we still have enough torque?
  + What purpose does our final project aim to fulfill?
  + What type of user interface should we have?
* Tasks from This Week
  + Zach
    - Research PyQT (1hr)
    - Research OpenCV Applications for barcodes (2hrs)
    - Block Diagram Draft (2hrs)
  + Jorian
    - Purchased structural units (.5hrs)
    - Began 3D printing prototype materials (1hr)
    - Researched damped dynamic systems (2hrs)
  + Mack
    - Researched vacuum pumps (1 hr.)
    - Block diagram draft (1 hr)
    - Researched reverse delta kinematics (30 min.)
* Group Meeting Topics
  + Vacuum pump implementation
  + Barcodes vs QR Codes
  + Custom PCB design elements
  + Communications Evaluation
  + Physical hardware placement and brackets
  + Potentially rewriting certain Python libraries
  + Block Diagrams
* New Items
  + Working example of basic delta motion has been achieved
* Tasks for Next Week
  + Zach
    - Continue research on barcodes
    - Continue research on PyQT
    - Research other user interface options.
  + Jorian
    - Look into dynamics equations for improvement of mechanical motion
    - Run torque analysis on motors to verify load bearing capacity
    - Perform motor characteristic tests to check for load current, voltage and speed
  + Mack
    - Implement vacuum pump system (2 hrs.)
    - Convert reverse delta kinematics C code in Python (1 hr.)
    - Further custom PCB design and component choice (1 hr.)
  + Everyone
    - Do good; don’t do bad.
* Hours This Week

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total Hours | Hours w/ Team | Hours Helping |
| Bendt, Zachary | 9 | 4 | 4 |
| Bruslind, Jorian | 8 | 4 | 4 |
| Hall, Macklin | 6.5 | 4 | 4 |