

6.S078 Update

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1 Plan Progress

We've had exciting progress this week! We applied to the Summer@Highland incubator on Monday, and are applying to the MIT Founders' Skills Accelerator on Friday.

In terms of progress, we had a lot of work on the software side completed over spring break. We have also moved farther along in eliminating potential low-cost projection technologies. These points will be covered in more depth in the prototype progress section.

2 Prototype Progress

The software advanced a large amount since the last update. The system now reconstructs a point cloud from a series of images taken with a DLP projector! The particular scan used was based on gray code scanning, an approach we are not planning on using (because it does require a DLP Projector), but was a good testable starting point (and it is very nice to finally have a scan of something). The system was written with easy adaption to other scanning techniques in mind.

In terms of projection technologies, we have eliminated Moire Contours as a technique that can be used with structured light scanning. If we were to use Talbot imaging, we found we would require wide beam laser light. This is also the case if we were to effectively use optical interference. Another option incorporating lasers would be to 'paint' laser lines on the object while the camera aperture is open. Simple projection through a grating is still a possibility.

A couple pinhole cameras we ordered arrived, and we have started playing with those.

3 Baffling Variables

The largest unknown remains execution, and in particular the ability to successfully incorporate a projection technology that is cheaper than DLP Projection. We're putting the majority of our effort into that.

4 Seven Day Plan

- Finish the accelerator applications successfully.
- Continue software development, incorporating meshing and potentially adding a swept-plane scanning technique (again, not a technique we will ultimately use, but good to ensure the flexibility of the code)
- Put the pinhole cameras on the Arduino boards and start capturing images
- Order gratings and LEDs powerful enough to test our hypotheses about LED+grate scanning

5 People to Meet

We are meeting with Ben Einstein, the director of Bolt, to discuss whether we would be a good fit for the Bolt hardware incubator.

6 Desired Resources

We are very thankful to Professor Gifford for continuing to probe the course's VC friends about prototyping funding.