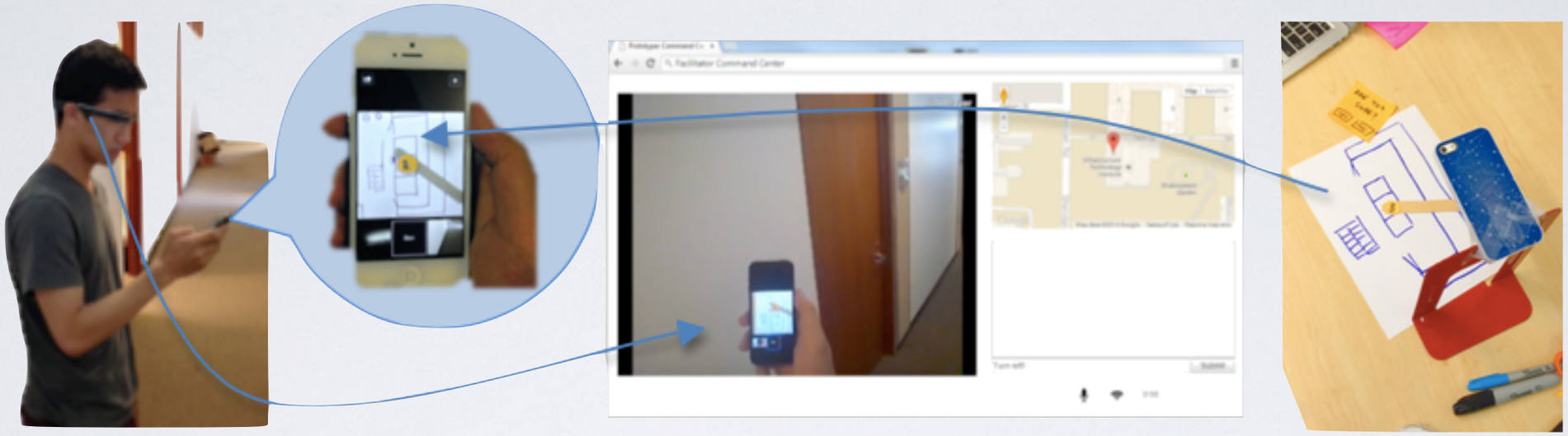


REMOTE PAPER PROTOTYPE TESTING

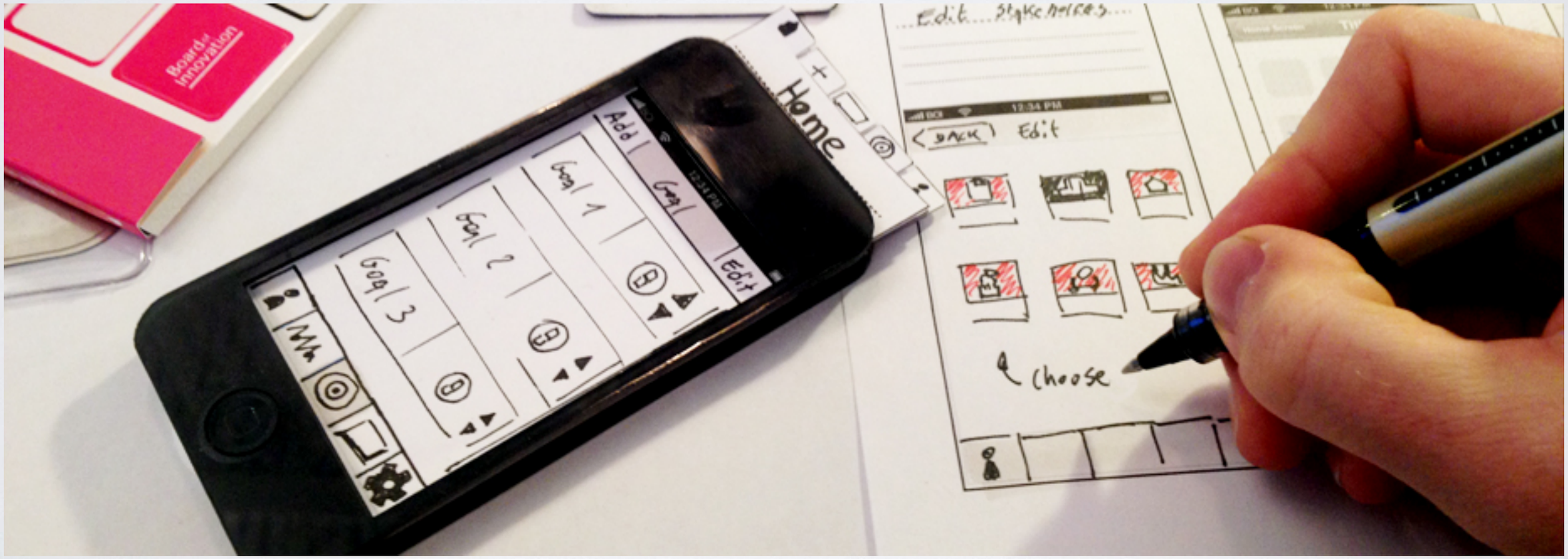
Kevin Chen, Haoqi Zhang
Delta Lab, Northwestern

MILLIONS OF MOBILE APPLICATIONS NEED PROTOTYPING AND TESTING

Mobile app usage accounts for >50% of time spent on digital media[Lipsman]

1. Andrew Lipsman. Major mobile milestones in may: Apps now drive half of all time spent on digital. http://www.comscore.com/Insights/Blog/Major-Mobile-Milestones-in-May-Apps-Now-Drive-Half-of-All-Time-Spent-on-Digital, 2014.

HOW CAN WE QUICKLY MAKE AND TEST PROTOTYPES?



PAPER PROTOTYPING

- Fast and cheap to make and test (<1 hour)
- Focuses on core interactions instead of look & feel
- Test multiple designs and iterate rapidly

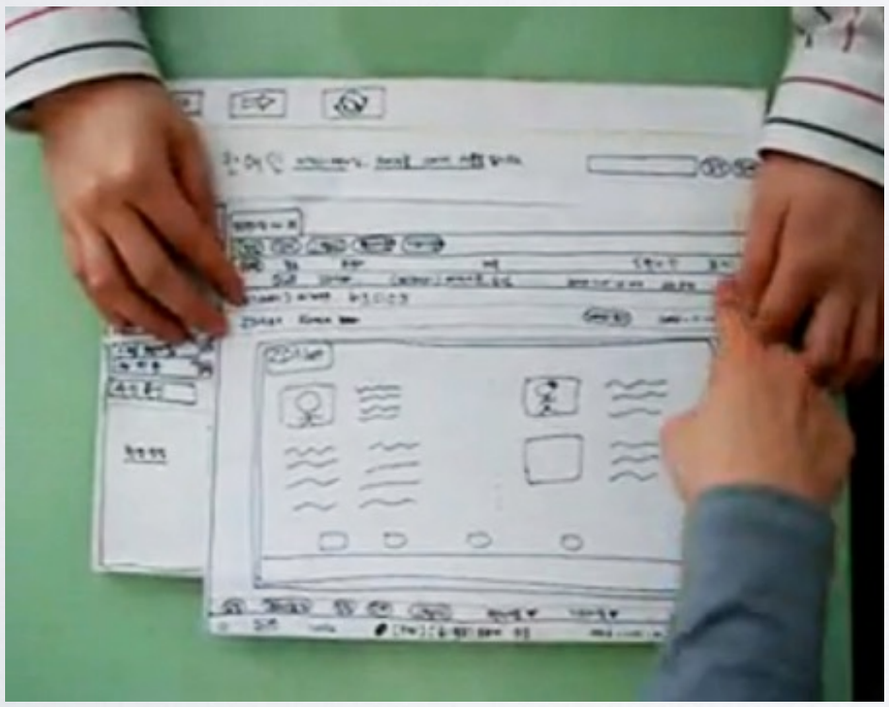
[Rettig; Tohidi, Buxton, et al.; Beckam, Barry; Dow, Glassco, et al.]

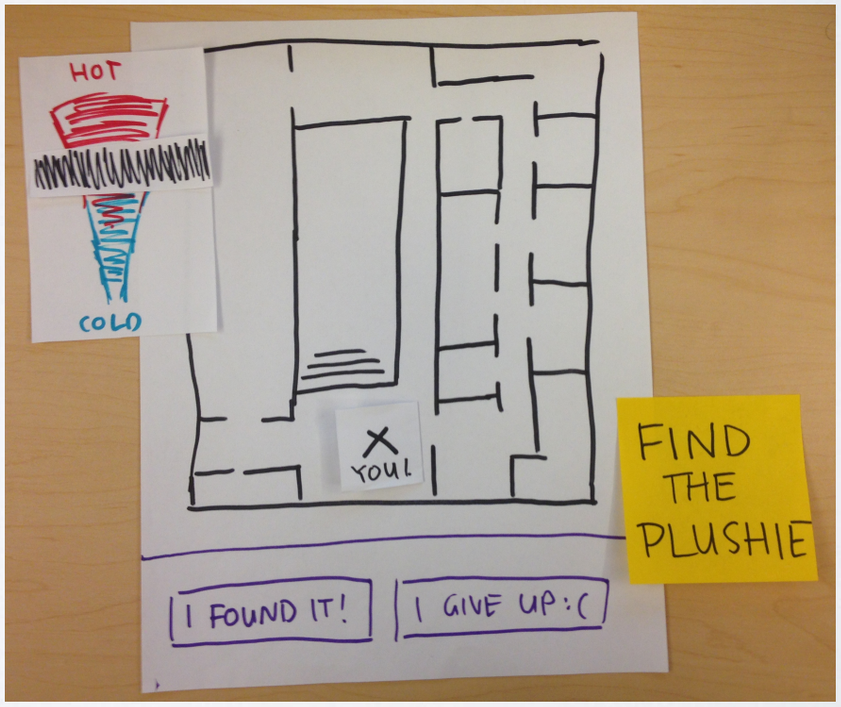
3. Marc Rettig. Prototyping for tiny fingers. Communications of the ACM, 37(4):21–27, 1994
4. Maryam Tohidi, William Buxton, et al. Getting the right design and the design right. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, CHI '06, pages 1243–1252, New York, NY, USA, 2006. ACM.
5. Sara L. Beckman and Michael Barry. Innovation as a learning process: Embedding design thinking. California Management Review, 50(1), 2007.
6. Steven P Dow, Alana Glassco, et al. Parallel prototyping leads to better design results, more divergence, and increased self-efficacy. ACM Transactions on Computer-Human Interaction (TOCHI), 17(4):18, 2010.

What about mobile applications?

IN LAB?

- Researchers have argued that paper leads to contrived scenarios and does not surface realistic expectations[de Sa]

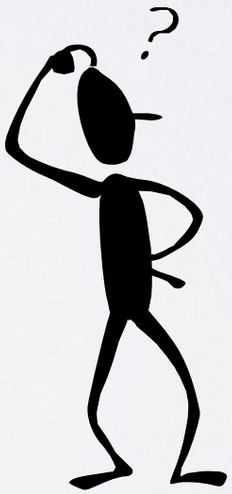




7. de Sá, M. and Carriço, L. 2008. Lessons from early stages design of mobile applications. In *MobileHCI '08*.

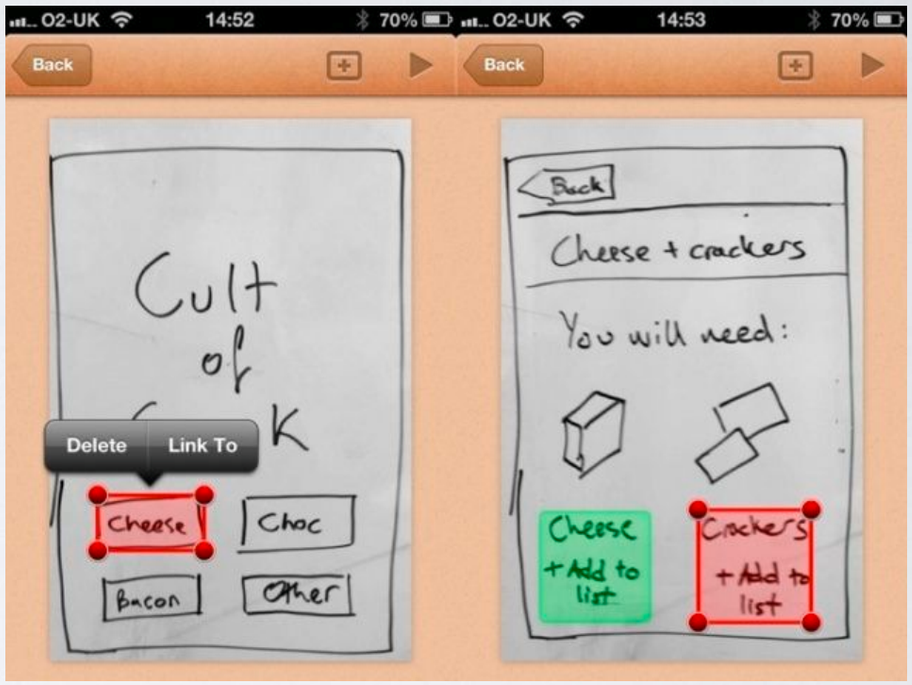
OUT OF THE LAB?

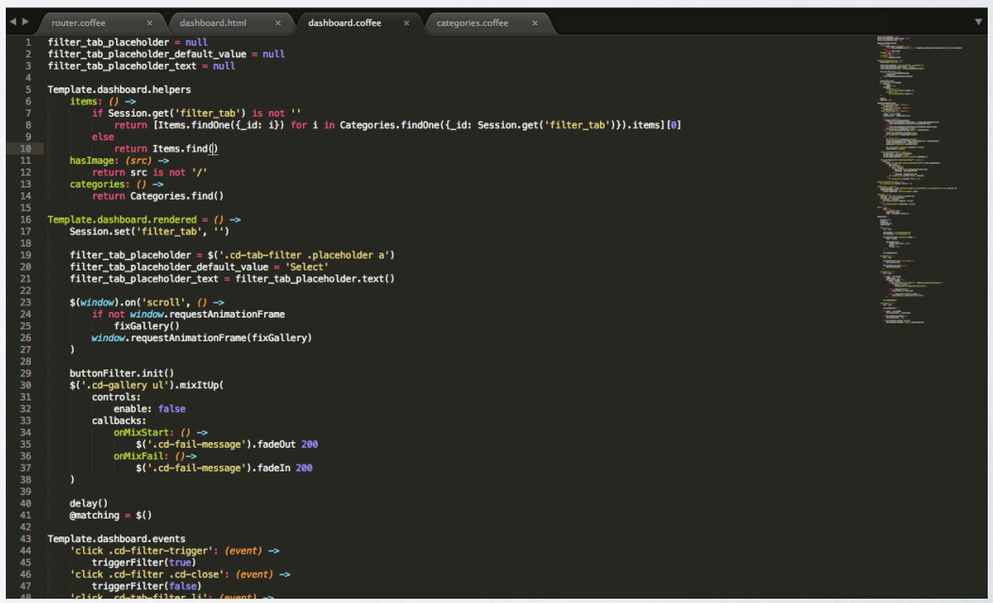
- practical challenges: follow user around, awkward to "wizard" the prototype and see user actions

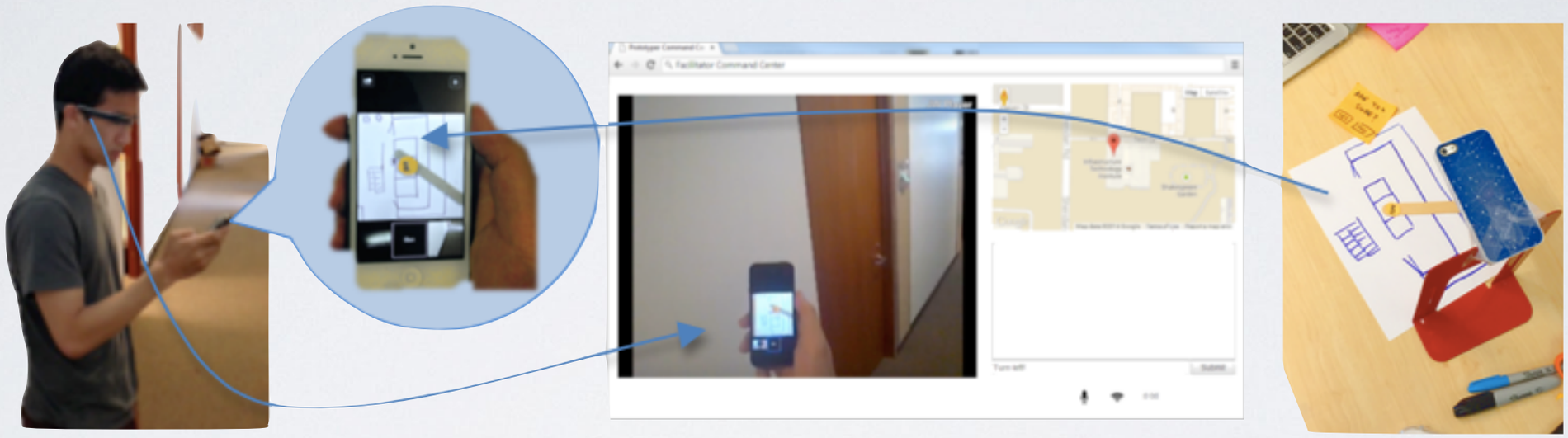


OUT OF THE LAB?

- current solutions:
- paper-in-screen (e.g. POP app)
- minimum viable product

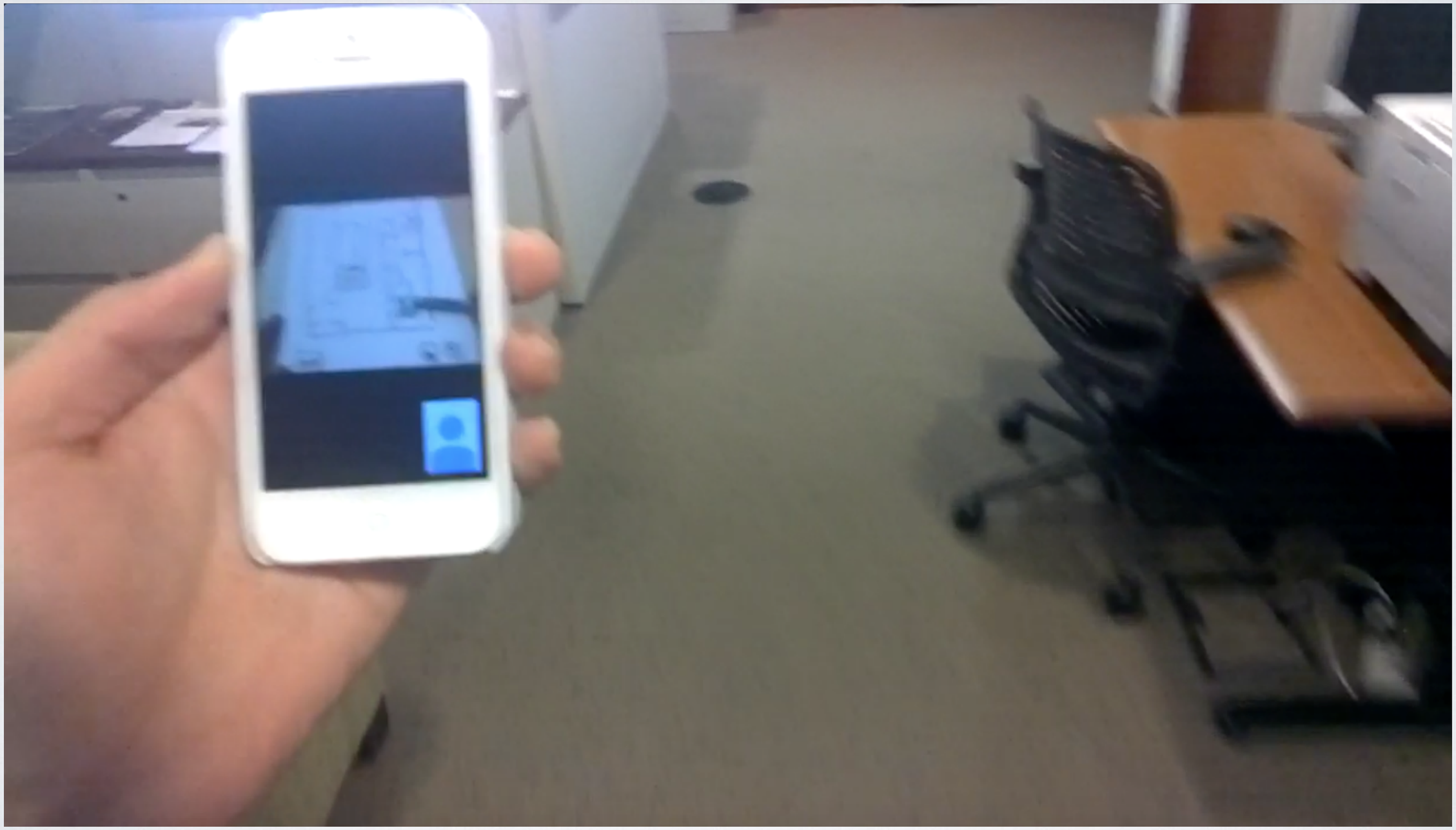




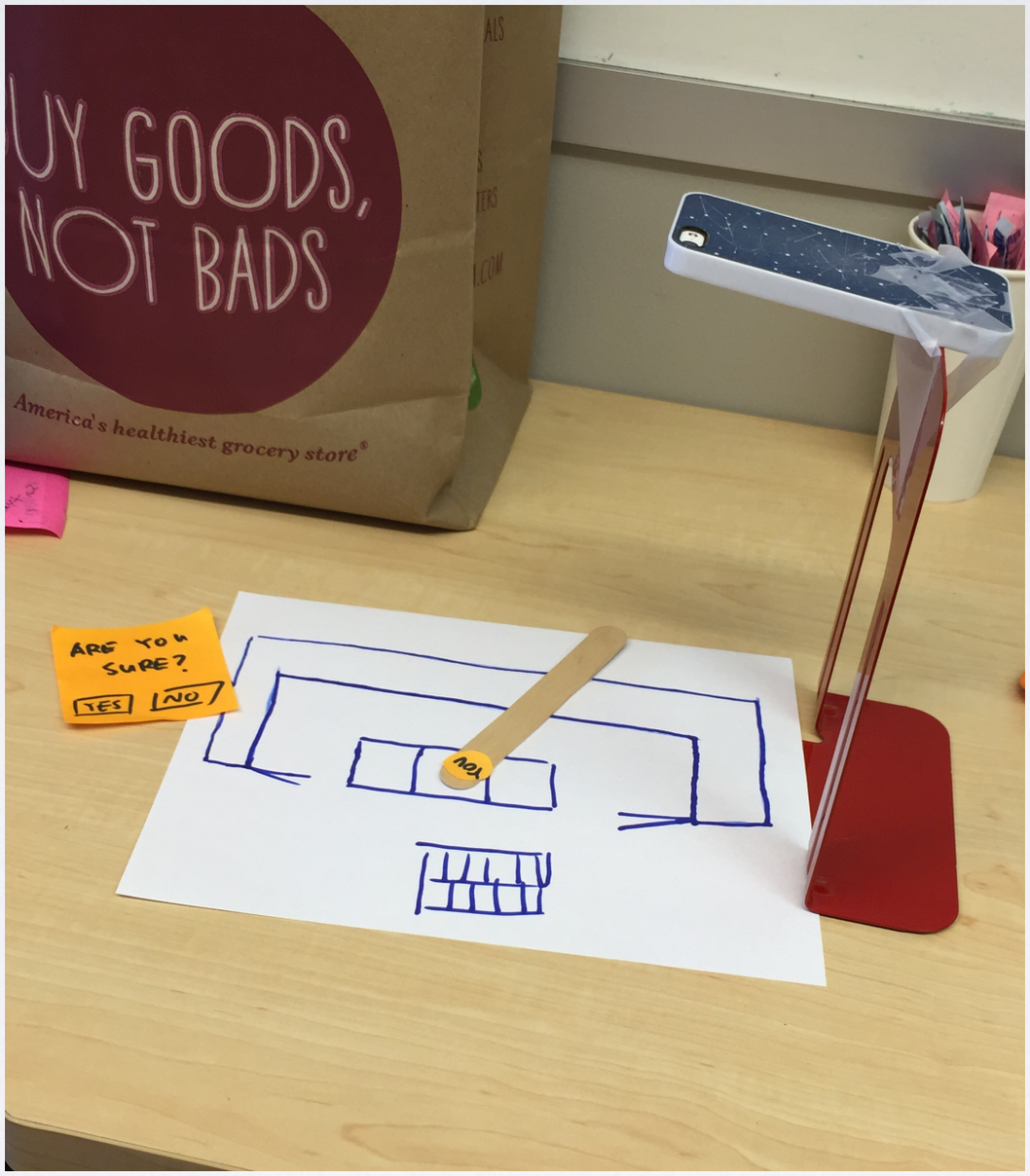


REMOTE PAPER PROTOTYPE TESTING

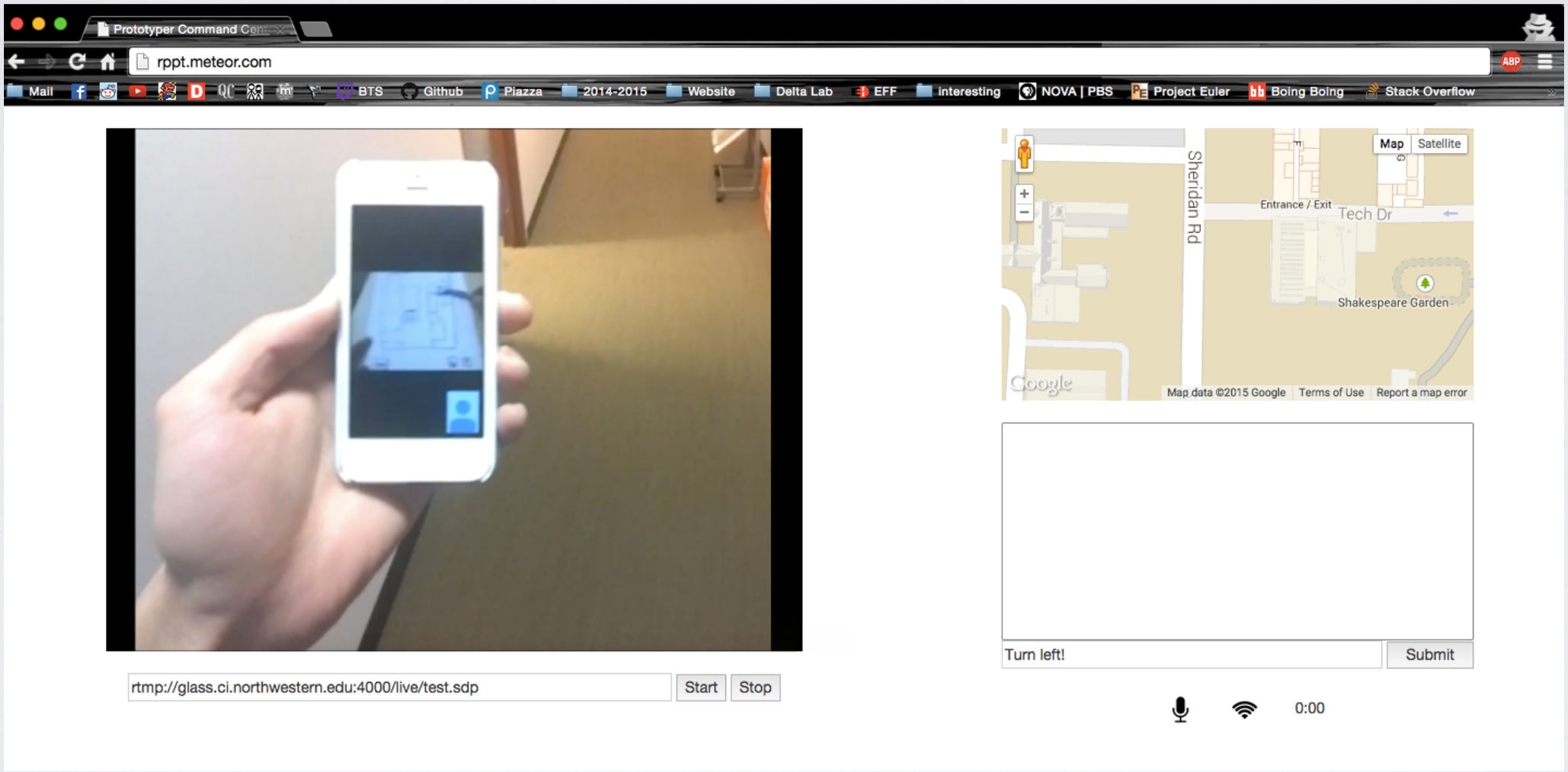
REALISTIC SITUATIONS

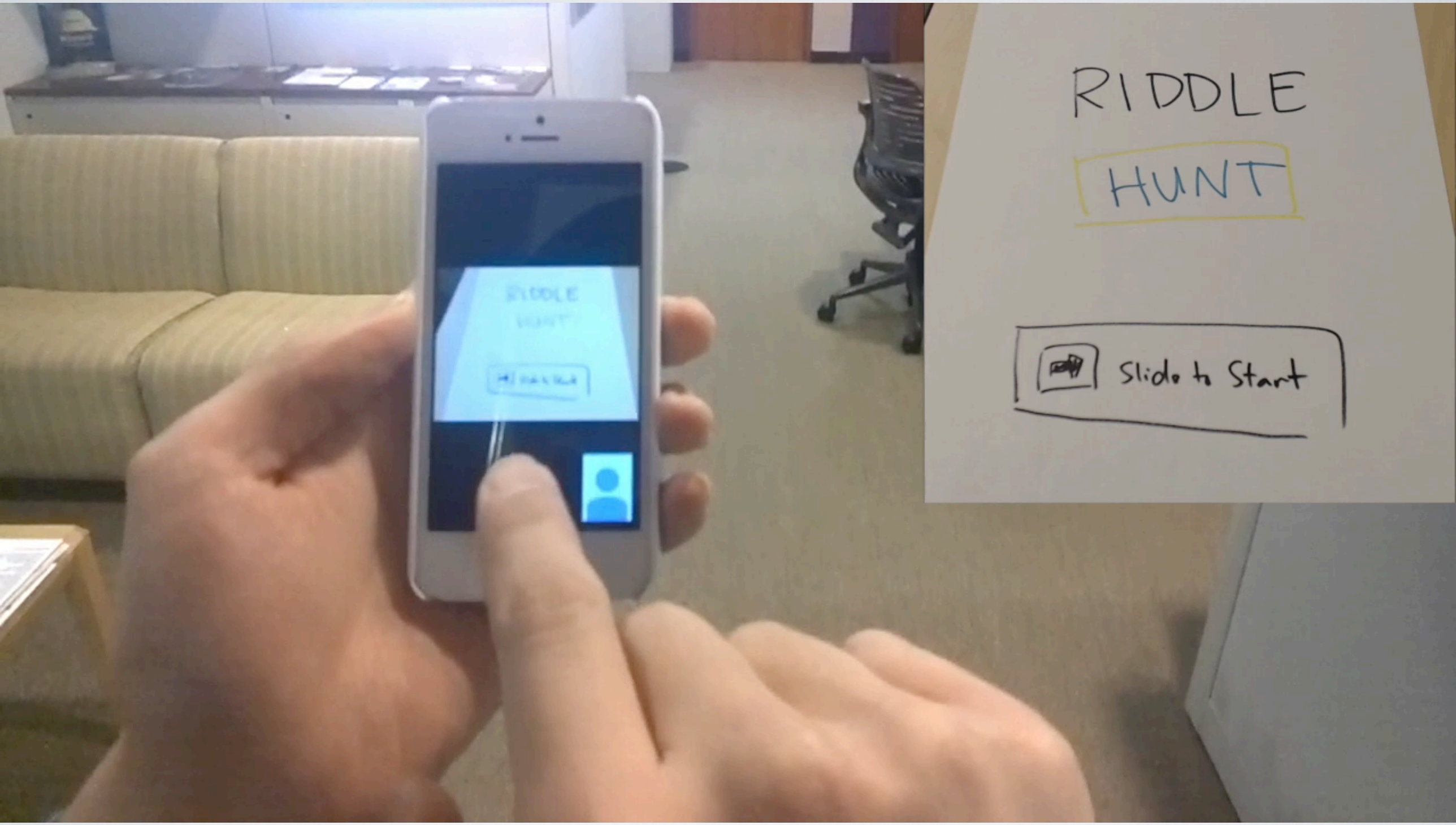


REMOTE WIZARDING



SITUATIONAL CONTEXT

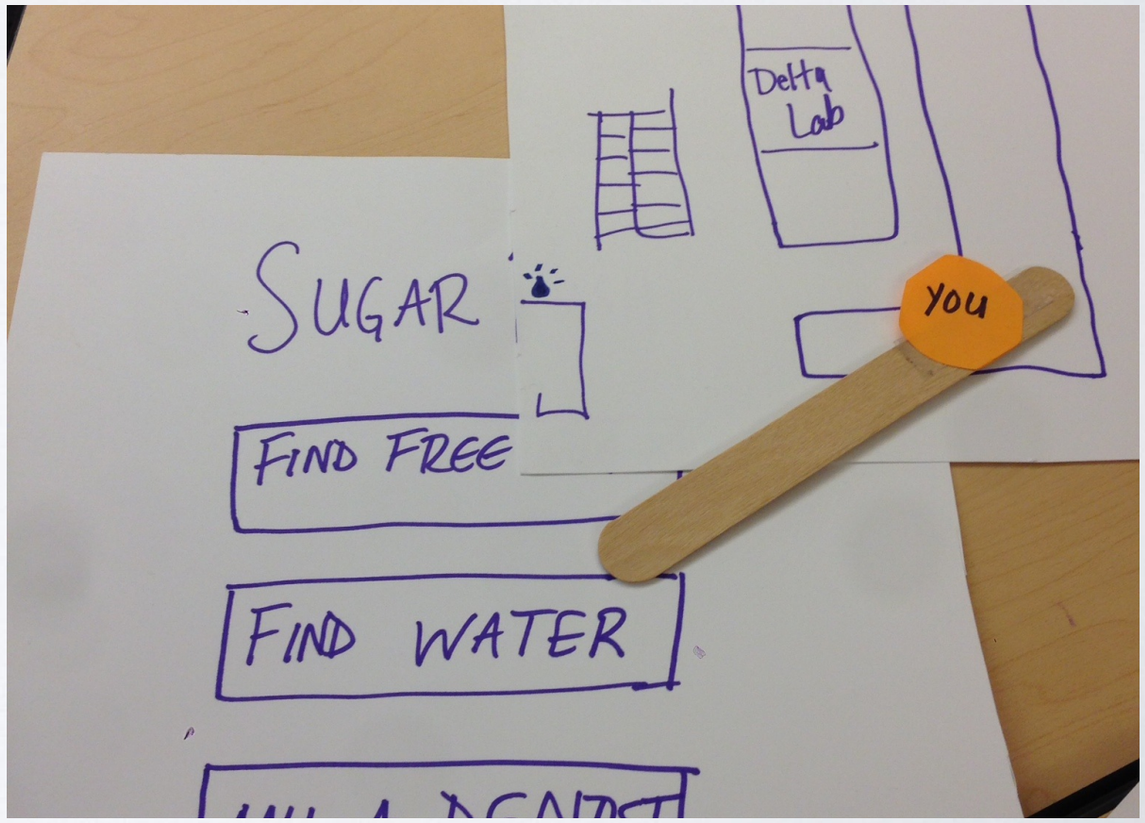



RIDDLE
HUNT
Slide to Start

PILOT

Community
Sugar Rush
Find Free Sugar
Find Water

INSIDE THESE
THE DOCUME
CAMERA


Delta Lab
SUGAR
YOU
FIND FREE
FIND WATER

IMPORTANCE OF CONTEXT

"…you didn't know what to do when you got to the location…users tried to click on [the candy icons] and wondered what to do next…"

REALISTIC SITUATIONS

"I got more of the stressed emotion of the app not making sense…seeing the paper and being able to press it seemed more real real, richer…actually using it in the actual environment"

Our tool allows designers to create paper prototypes, test them outside the lab, and flexibly update the interface in response to events while testing.

ACKNOWLEDGEMENTS

Thanks to the Undergraduate Research Grant Program, administered by the Office of the Provost; the NSF; all study participants; Delta Lab; and especially Haoqi.

Our tool allows designers to create paper prototypes, test them outside the lab, and flexibly update the interface in response to events while testing.

FUTURE WORK

- mixed fidelity prototyping (e.g. paper "widgets")
- wizard throughout a day (e.g. recruit a real-time crowd wizard)

GOOGLE GLASS ALTERNATIVES

- **primary affordance:** first-person perspective for situational context

- **possible alternatives:**
  - any other first-person perspective camera
  - phone cameras
  - Google Street View

GOOGLE GLASS ALTERNATIVES

- interface to display tap gestures