RESEARCH SUMMARY

The following critique is for the paper: "FrameWire: A Tool for Automatically Extracting Interaction Logic from Paper Prototyping Tests" written by Yang, Xiang, Katherine, Morgan and James. The paper briefs the tool that the authors have made, FrameWire, a computer vision based system that automatically extracts interaction flows from the video recording of paper prototype user tests. According to the authors, paper prototyping offers unique affordances for interface design. However, due to its spontaneous nature and limitations of paper, it is difficult to distill and communicate a paper prototype and its user test findings to a wide audience. So, their tool, FrameWire offers two benefits: structural view of video recording that allows designer to understand design concept and automatic generation of interactive HTML based prototypes that can be tested with large group of users. The extraction of prototype is achieved by automatically collecting video frame sequences into an interaction flow graph based on similarities in frames and clustering process controlled by designer.

GOOD EVALUATION

In particular what I liked about the paper is the idea behind FrameWire, i.e., it tackles a major issue of spontaneous and physical nature of paper prototyping. The paper prototyping makes it difficult to analyze and communicate a design and test findings to a broader audience. The test of user interface in paper prototyping is often recorded by the designers to collect the user feedback. Hearing the user thought process in addition to observing their actions is vital for rethinking the design of an iteration with each iteration. This is the reason designers usually videotape but are unwilling to review their recordings.

This is where FrameWire comes into action. It provides a convenient means between paper prototyping and video testing. Through its wiring of video frames, the whole process of going through the video and then editing manually, is eliminated since it automatically generates editable interaction flow graphs. Thus, allowing traditional paper prototyping while bringing paper prototyping forward into an editable and interactive electronic form.

Also, the FrameWire can extract a full flow graph rather than just sequential steps. The video captures users' actions and vocal concerns and allows deeper analysis of behavior, thus, proving a great tool beneficial for the designers. It can accelerate process of creating best user interface design and decrease number of iterations of a product before production.

CRITICAL EVALUATION

As recognized in the paper, their tool has some limitations as well. There are many rules to follow during the video designing such as the shape of the paper matters, the time during which the user puts the finger on the paper matters. Again, the users have to wear the blue fingertip in order for the tool to recognize the cursor. The FrameWire stops working in case the paper prototype is not rectangular. The special requirement of having a blue fingertip other than having a steady camera, might sometimes get looked over. As they mention in the paper, the FrameWire accounts for one blue fingertip, which means if there are multiple finger gestures which are prevalent in touch screen technologies, the FrameWire wont account for that. This also means the tool can detect only click events.

Like us as a group, HiddenCampers, we are making an application where people are browsing through the campsites given on our website. We require the user interaction in a way that users

are scrolling through the pages and also reviewing the already uploaded campsites. In our case the FrameWire won't be able to recognize scrolling and commenting events.
Another aspect of FrameWire could be a potential annoyance of how the program extracts and triggers user interface screens into flow graph. If there are significant differences in the frames, it interprets that as being a new screen. Although the designer can refine and gloss the generated flow graph in case the automatic extraction does not fully captures designer's intent, and the tool provides and Extract slider for this purpose, yet it can be a tedious task.
Also, the flow graphs are presented on a screen in a confusing way. Although each screen is differentiated by number, the arrow linking can be misleading at times.

QUESTIONS

Following questions can be raised based on the paper about FrameWire tool:

- How similar a set of frames need to be for the tool to consider them as repetition of the same screen?
- How will the tool identify if the fingertip remains more than required threshold of time in order to do more activities apart from just clicking?
- How are they using their tool for testing on a generic user as defined in the paper?
- What could have been the results had they tested their tool on users other than designers? How would they use the tool? And how would it be more convenient rather than paper prototyping?

CONCLUSION

Overall, the FrameWire is a great tool that acts as a medium between traditional paper prototyping and digital interactive prototypes. It allows designers to extract information from the flow graphs extracted through raw video clips of paper prototyping tests. This makes it possible for designers to easily analyze user feedback by viewing generated statistics and directly indexing transforms paper prototypes into interactive HTML-based prototypes. Although there are a few limitations in the tool as well, yet if those are catered to, the tool is a great means of interactive designing process.