PRESENTATION

Sugimoto Lab Meeting

Tips to write papers in English

2013/7/22

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Agenda

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- What to think of before writing a paper.
- Parts of technical papers
  - Abstract
  - Introduction
- Thinking from Japanese to English

What to think of before writing a paper

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Try thinking of these questions.

- *What is the problem?*
- *Why is it interesting and important?*
- *Why is it hard?* (E.g., why do naive approaches fail?)
- *Why hasn't it been solved before?* (Or, what's wrong with previous proposed solutions? How does mine differ?)
- *What are the key components of my approach and results?*

  Also include any specific limitations.

Parts of technical papers

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- Abstract
- Introduction
- Related works
- The body
- Performance Experiments
- Conclusion
- Future works
- The Acknowledgements
- Citations

First two parts decide the value of your paper

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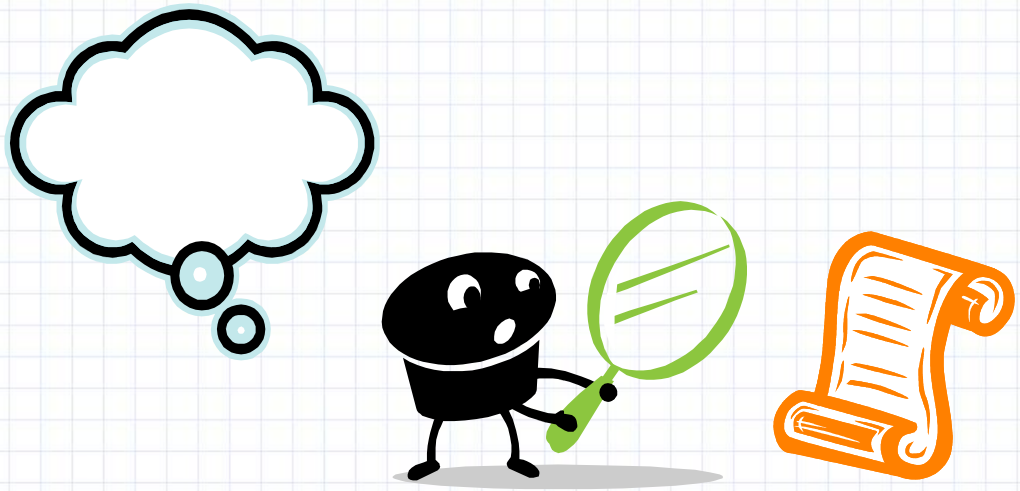
When you try to choose a paper to read, you look at….

Abstract, Introduction and Conclusion

You peek through them and see if it interests you.



Abstract summaries your paper

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Abstract should state these three things.

1. the problem
2. your approach and solution
3. main contributions of the paper

We present a novel immersive (1)telepresence system that allows distributed groups of users to meet in a shared virtual 3D world. (2)Our approach is based on two coupled projection-based multi-user setups, each providing multiple users with perspectively correct stereoscopic images. At each site the users and their local interaction space are continuously captured using a cluster of registered depth and color cameras. The captured 3D information is transferred to the respective other location, where the remote participants are (3)virtually reconstructed. We (3)explore the use of these virtual user representations in various interaction scenarios in which local and remote users are face-to-face, side-by-side or decoupled. Initial (3)experiments with distributed user groups indicate the mutual understanding of pointing and tracing gestures independent of whether they were performed by local or remote participants. Our users were excited about the new possibilities of jointly exploring a virtual city, where they relied on a world-in-miniature metaphor for mutual awareness of their respective locations.

Immersive Group-to-Group Telepresence
Stephan Beck, Andr´e Kunert, Alexander Kulik, and Bernd Froehlich, IEEE VR 2013

Good paper has good introduction

PRESENTATION

Remember the “What to think of ” questions.

Answering these 5 question

- *Why is it interesting and important?*
- *What is the problem,(motivation)?*
- *Why is it hard?* (E.g., why do naive approaches fail?)
- *Why hasn't it been solved before?* (Or, what's wrong with previous proposed solutions? How does mine differ?)
- *What are the key components of my approach and results?*

  Also include any specific limitations.

Plus

- *"Summary of Contributions".*

Examples from IEEE VR 2013 best paper

PRESENTATION

1 INTRODUCTION

Marvin Minsky originally coined the term "telepresence" to describe the ability of controlling the instruments of a remote robot as if operating directly with one's own hands [29]. In this sense, the term refers to remote manipulation paired with high-quality sensory feedback. Bill Buxton later transferred the concept of telepresence to the domain of telecommunication [8]. He distinguished between the task space and the person space in collaborative work and argued that "effective telepresence depends on quality sharing of both". Considering a shared person space, Buxton et al. suggested representing each participant of a teleconference by an individual terminal equipped with audio and video facilities [7]. A shared task space was provided with additional interconnected electronic whiteboards. Ishii and Kobayashi's Clearboard [15] expanded on the metaphor of a transparent whiteboard between two distant users, which merges the shared person and task space for one-to-one telecommunication. Since then, the advances toward a shared person space have been impressive (e.g. [3]), while the idea of an integrated shared space for groups of people and tasks has received much less attention.

We created an immersive telepresence system that allows distant groups of users to collaborate in a shared task space. We used two projection-based multi-user 3D displays [22, 10] to provide the means for local collaboration. These two systems were driven and coupled using the distributed virtual reality framework AVANGO [21]. A cluster of depth cameras continuously captured participants and physical objects at each site. The captured 3D data was then transferred to the remote location in real time and displayed within the shared virtual environment. This setup allowed us to realize direct face-to-face group meetings as if occurring locally. Furthermore, we explored other configurations where the groups were placed next to each other or navigating completely independently in the shared virtual world. Both groups of users were informed of their respective locations through a world-in-miniature (WIM) that was attached to a stationary navigation device in front of the display (Figure 1).

Our work was inspired by many other immersive telepresence projects, including the early TELEPORT system [12], the National Tele-Immersion-Initiative (NTII) and the blue-c project [13]. In these systems the capturing technology remained a challenging problem, which is now simplified by the availability of commodity depth cameras [47]. Recent work based on depth cameras produced promising results for one-to-one telepresence [24, 4] using 3D video avatars. Sev-

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Manuscript received 13 September 2012; accepted 10 January 2013; posted online 16 March 2013; mailed on 16 May 2013.
For information on obtaining reprints of this article, please send e-mail to: tvcg@computer.org.

Why interesting and important.

Problem motivation

Key components

Why is it hard? Hasn't it been solved before?

Tip!

One paragraph focus on one topic.

Examples from IEEE VR 2013 best paper

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eral projects tried to reconstruct the surrounding local space of the participants, as seen with [24]. Others focused on capturing the involved persons, their postures, gestures and actions to embed them into a virtual environment [13, 23, 34]. We followed this last approach with an additional interest in capturing handheld objects and the interactions with a navigation device. However, none of the existing systems provided multi-user 3D display capabilities and in most cases they were too small for colocated group interaction in a shared task space or they did not provide life-size 3D representations of the users.

We built the first telepresence system that provides an integrated shared space in immersive virtual reality for groups of people and their tasks. Our system displays virtual objects in the shared space between the two groups of users as well as surrounds them with a consistent virtual environment. The main contributions of our work fall into three areas:

- 3D capturing and reconstruction: We introduce the use of a depth correction volume for precise calibration of individual depth cameras, which is the key to registering multiple depth cameras over a larger space.
- Interaction: Our interface allows users to couple both groups in registered face-to-face or side-by-side situations. Alternatively, both groups can move independently through a virtual world. We suggest the use of a WIM to provide awareness of the locations of the respective other group in the environment.
- User study: Our study confirms that local pointing can be exploited as a means for direct communication between local and remote participants. In both situations, we also observe similar limitations in accuracy, albeit for different reasons. Local pointing is affected by the accommodation-convergence mismatch while remote pointing suffers from the precision of the 3D reconstruction of a user's finger or hand.

In our work we provided basic audio communication through a single microphone and speaker at each site. While our application ran in a distributed configuration for driving two different projection setups, we did not focus on the data distribution aspect. All our machines were connected to our local 10 GbE network. Nevertheless, significant amounts of engineering are necessary to build and run such a complex distributed system, including the setup of and the communication with multiple depth camera servers, the calibration and registration of the different camera coordinate systems and the stereoscopic real-time rendering of up to 10 image streams consisting of color and depth information.

The 3D reconstructions from a set of depth images still contain many visual artifacts despite our significantly improved registration of multiple depth cameras and their depth accuracy. In particular, the reconstruction of the shutter glasses leaves much to be desired. However, our users ignored these artifacts for the most part and focused on the tasks. They confirmed that taking turns and collaboration as well as communication through gestures worked well.

what's wrong with previous method?

How is mine different

contributions

components limitations

Writing from Japanese to English

PRESENTATION

- Don't literary translate them… try paraphrasing!
  - "We present a novel immersive…."
  - "The main contributions…"

  These kind of phrase never comes out in Japanese language…

  Sometimes, sentences that comes out of translators means nothing.
- Try using thesaurus… dictionary of synonyms!
  - Good writing is a bad writing that was rewritten

  Try thinking of ways to say the same thing but w/ different words.
- Read paper from similar area… see how they describe!
  - Technical terms, way of describing a method depending on the culture.
  - Good paper is a good textbook to learn cool combination of words.

    Ex way of using transitions, relative pronouns, adverb and adjective.

Reference

- **Tips for Writing Technical Papers by Jenifer Widom**

http://infolab.stanford.edu/~widom/paper-writing.html

- 良い論文を書くために知っておくべき5つのこと

http://leoclock.blogspot.jp/2008/07/blog-post.html

- **Good Writing by Marc H. Raibert**

http://www.cs.cmu.edu/~pausch/Randy/Randy/raibert.htm

- How to Get Your SIGGRAPH Paper Rejected
  - By Jim Kajiya, SIGGRAPH 93 Papers Chair