The First 3DUI Grand Prize

Pablo Figueroa∗
Universidad de los Andes

Sébastien Kuntz†
Virtools / Dassault Systemes

Yoshifumi Kitamura‡
Osaka University

ABSTRACT
The IEEE Symposium on 3D User Interfaces is running for the first time the 3DUI Grand Prize, a contest on innovative and practical solutions to classic 3DUI problems.

1 INTRODUCTION
The field of 3D user interfaces (3DUI) has benefit from active research by a growing community over several years, and it promises to bring solutions to the ever increasing problem of handling complex 3D data. The 3DUI Grand Prize is an attempt to acknowledge important contributions from this community and its creative capabilities in the development of interesting and practical solutions to common 3DUI problems.

We believe our community has reached some level of maturity, which is reflected in the amount of academic results shown at 3DUI and related conferences, besides the commercial products and solutions we can find nowadays in the market. However, our community misses ways to recognize achievements and common knowledge we have created, and enjoy innovative and interesting solutions some groups can create when they approach known 3D tasks.

The 3DUI Grand Prize is opened to anyone interested in 3DUIs, from researchers, to students, enthusiasts, and professionals. We encourage groups of any size to find out innovate solutions to classic 3DUI problems (i.e. travel, selection, manipulation), show them to our community and compare them to the ones implemented by peers. Any existing hardware device and software tool may be used, so current solutions can show their advantages.

We decided for the first 3DUI Grand Prize to pick a basic scenario and problem that requires basic 3DUI tasks. We hope this scenario shows contestants’ capabilities for solving common problems in 3D applications and for creating innovative and complete solutions.

2 PROBLEM DESCRIPTION
The task for this first 3DUI Grand Prize is to find some objects in a supermarket that looks as the one in Figure 1, and move them to a purple table. Copies of the target objects are found on top of such table, and target objects are hidden among other objects in the aisles of the supermarket marked on top with red dots in a board. Starting at a given position that is marked as a viewpoint, the solution should allow users to travel inside the shop to the aisles with objects. In this case, we do not ask for collision detection in order to avoid related performance issues, although contestants can freely decide what to implement. Once arrived at a destination, users should be able to select and manipulate objects, in order to find a corresponding one to those shown on the purple table. Once an object is found, it should be moved and placed beside its copy in roughly the same orientation.

3 CONTEST RULES
Teams of any number of people could register to the contest. Once registered, they received a VRML model of the supermarket to create and test their solution. There are two categories for the contest: full submission and video only submission. Participants of the full 3DUI contest should submit the following material:

- A file AUTHORS with the authors of the solution
- A file INSTRUCTIONS with the instructions of use and requirements
- A file SAMPLES.csv, with the following data for at least 10 executions of the program, in a comma separated format: time of execution, average frame rate, if the task was completed or aborted (COMPLETED or ABORTED).
- A video of the interface in action. It should show the user, the input devices, and the display
- The scene files, in the format that is used in the final solution
- If it is possible and desired, participants could submit a copy of the software and source code developed, plus a file INSTALL with the installation instructions

Participants of the video only category can obviate the INSTRUCTIONS file and the software. Questions are answered on the contest mailing list and stored in the mailing list archive [1]. Selected participants of the full 3DUI will be able to show their solutions in action at a special demo session at the conference, with new data that will be provided some weeks before the conference, in order to allow them to prepare and fine tune the scene. We ask selected participants to resubmit their scene files and make them public, so anyone can use improvements made by other on the data. They should bring all necessary equipment to the demo session, and they will be asked to run their application both with expert

∗e-mail: pfiguero@uniandes.edu.co
†e-mail:sebastien.kuntz@nowan.net
‡e-mail:kitamura@ist.osaka-u.ac.jp

Figure 1: The Sample Supermarket
and novice users that will be trained on site. These sessions will be videotaped. Finally, participants will have a space beside the poster’s exhibition where attendees will be able to see the different solutions and rate them.

Judges will take into consideration the following elements for their final decision: average values for completed tasks (time of execution, frame rate), fitness of the solution to the problem, generality of the solution, ease of use of the solution, how enjoyable is the solution, and average public rating.

4 Prizes

There will be prizes for the three best solutions. There will also be a prize for the best video-only submission. The winners will be announced at the reception. Currently, prizes include the following items: Novint Falcon haptic devices, 3DVIA Virtools licenses, and 3D Connexion SpacePilots. We also want to acknowledge the monetary contributions from The Special Interest Group of 3D User Interfaces (SIG-3DUI) of The Virtual Reality Society of Japan (VRSJ) and The French National Association of Virtual Reality (AFRV). The authors of the winning solutions will also be given the opportunity to co-author an article about the event in the IEEE Computer Graphics and Applications (CG&A) journal.

5 Registered Teams

Of the 23 teams initially registered from all over the world, we have 12 competitors in the video category and we have selected 4 teams for the live competition. We would like to acknowledge their effort and we wish the best of luck to all of them.

The teams registered for the live competition are the following:

<table>
<thead>
<tr>
<th>Team name</th>
<th>Participants</th>
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</thead>
<tbody>
<tr>
<td>Fighting Gobblers (Virginia Tech, USA)</td>
<td>Felipe Bacim, Regis Kopper, Anamary Leal, Doug Bowman, Tao Ni</td>
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<tr>
<td>GVU TwinSpace (Georgia Tech, USA)</td>
<td>Derek Reilly, Enrique Santos, Andy Wu, Andy Echenique, Jee Yeon Hwang, Keith Edwards</td>
</tr>
<tr>
<td>im.ve team (University of Hamburg, Germany)</td>
<td>Steffi Beckhaus, Kristopher Blom, Harald Brinkmann, Matthias Haringer</td>
</tr>
<tr>
<td>HANK Lab (University of Iowa, USA)</td>
<td>Dat Tien Nguyen, Timofey Grechkin, Jim Cremer</td>
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<tr>
<th>Team name</th>
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</tr>
</thead>
<tbody>
<tr>
<td>INF-UFRGS (Universidade Federal do Rio Grande do Sul, Brazil)</td>
<td>Luciana Nedel, Leandro Rosniak Tibola, Leonardo Garcia Fischer, Rafael Pacheco Kovalski, Leonardo Santagada, Daniel K. Osmari, Guilherme do Nascimento Oliveira</td>
</tr>
<tr>
<td>Interaction in Virtual Reality Group @ AG WBS/UniBi (University of Bielefeld, Germany)</td>
<td>Thies Pfeiffer, Nikita Mattar, Robert Abel, Roman Bauer, Stephan Brandauer, Timo Pascal Dankert, Philipp Dresselhaus, Andre Hilsendegger, Markus Kastrop, Hauke Kaufhold, Lukas Keitenbach, Katharina Klein, Sabine Klein, Sven Kunze, Phillip Luecking, Nico Luedike, Kai Alexander Mismahl, Daniel Nacke, Anja Philippsen, Patrick Renner, Dorothe Schneider, Sara Winter, Andreas Jagel</td>
</tr>
<tr>
<td>Galaxy Rats (University of Hasselt, Belgium)</td>
<td>Joris Geron, Erik Vanderstraeten, Rob Bertels, Wiete Jorissen</td>
</tr>
<tr>
<td>Three girls and three guys (University of Hasselt, Belgium)</td>
<td>Lode Vanacken, Sofie Notelaers, Johanna Octavia, Anastasia Beznosyk, Tom De Weyer, Steven Maesen</td>
</tr>
<tr>
<td>UHasselt Student Team (University of Hasselt, Belgium)</td>
<td>Yannick Kalokerinos, Johan Vereecke, Maarten Krijn, Bjorn Schobben</td>
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<tr>
<td>University of Minnesota Duluth (USA)</td>
<td>Frank Steinicke, Pete Willemsen</td>
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<tr>
<td>VRM team (VRM, Ukraine)</td>
<td>Maxim Lysak, Viktor Kuropyatnik</td>
</tr>
<tr>
<td>VR-Teleshopping BU Weimar (University of Weimar, Virtual Reality Systems Group, Germany)</td>
<td>Jakob Gomoll, Timm Macho, Michael Hengst</td>
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ACKNOWLEDGEMENTS

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REFERENCES