IEEE VAST Challenge 2011

Guidelines

Guidelines for preparing your materials

Those guidelines bring together the guidelines previously spread in various parts of the VAST Challenge websites, augmented with guidelines gathered by Jean Scholtz's during interviews of professional analysts who acted as judges in the VAST 2009 Challenge - See Jean's Beliv'10 paper

Short Answer:

Short answers are only requested in the mini challenges.
A short answer is a text description of the answer and of how you arrived at the answer. It is limited to 150 words (including captions) and a maximum of 2 screen shots.

About the short and detailed answers
All the recommendations for detailed answers (below) apply for short answers, which are just shorter! See the Task Descriptions for the word count limits. All screen shots should be provided in a form which is readable when the html document is printed, i.e. but we highly recommend that you scale down the screen shot so it prints properly, but link to the full resolution version of the screenshot so judges can review them properly online. Do not forget to include the legend for the visual encodings of your screen shots, captions describing what data is being shown, and what filters have been applied in the static figures presented or discussed. In other words, help us understand what we are looking at!

Detailed Answer:

Detailed Answers may be requested by the mini challenges and the Grand Challenge.
A Detailed Answer is a longer text description focusing on how you arrived at the answer with much more details than the Short Answer.
• For mini challenges, detailed answers are limited to 1000 words (including captions), with a maximum of 5 screen shots.
• For the Grand Challenge there is no size limit (but less than 5000 words is recommended with a maximum of 15 screen).

Detailed answers should provide the answer and describe in detail the PROCESS USED TO ARRIVE AT THE ANSWER.

About detailed answers
Detailed answers should provide the answer and describe in detail the PROCESS USED TO ARRIVE AT THE ANSWER. Clearly describe what was done manually or automatically, what you saw in the displays that helped you formulate or prove your hypotheses. For example don't just say "we used advanced technique X to easily see who is involved", instead be specific: tell us HOW you can see who was involved? E.g. something like "we suspected that Joe was involved because his name appeared in red when color was mapped to the number of oversee travels and he stood out as being outside his family cluster". Describe the process you used (what you had to do to load the data, how you decide to start the analysis. what worked and what didn't work, how you recorded your findings, dealt with uncertainty etc.) Make very clear what was accomplished manually, automatically, or in between. Provide estimates of the effort required (e.g. in 4 hours three team members read all papers written by Paul White; or we wrote a script to do XYZ in 30 minutes, or We found the name of the architects in about 20 minutes by filtering from January to march using the range slider, then follow all international links (colored blue) and copy and paste the new names into a shared text document.

Video:

All entries are required to include a video with voice narration.
Maximum length (shorter is better):
• 4 minutes for Mini Challenge entries
• 15 minutes for Grand Challenge entries.
NOTE: If you submitted an entry to all three mini challenges you already have three videos for them. You may reuse all or parts of the 3 videos but should also leave enough time to show how you integrated the multiple

datasets and come up with the grand challenge answers.

About Video

See the Task Descriptions for this year's constraints in duration.

Voice narration and good usage of the mouse to point at relevant elements of the screens are essential. Simple titles help structure the video to show steps in the analysis process. Generic advertisements of the tools' features are not useful, instead demonstrate specifically on how you worked with the data to understand the situation and answer the questions e.g. how you interacted with the tools, what insights were revealed by the displays, how you gathered evidence to support or refute hypothesis, etc. You can show how you started your analysis, then jump to the end to see the final results.

Analysts who judged the past submission told us they looked for the following in the video:

- A clear explanation of only those aspects of the tool that you used.
- A clear explanation of your starting point for analysis and how you selected it.
- If there is a choice of visualizations to use explain why one was selected.
- An explanation of what was seen in the visualization that helped in the analysis.
- If filters or transformation are applied, explain what was used and in what sequence they were applied.
- If there are anomalies in a visualization explain how they are factored into the analysis.
- A careful definition of subjective terms used such as "uncertainty."

If you are not familiar with recorded video demonstrations, please try Camtasia which works well for most systems, unless you have a fast animation (and then you need to record with an external video recorder). Make sure the cursor is enlarged to be seen more easily… and use zooming when the screen in not readable. For additional general guidelines about creating video demonstration of interactive systems in general you might find this paper interesting Show Me! Guidelines for Producing Recorded Demonstrations .

Debrief:

Debrief are requested only in the Grand Challenge. The debrief is basically the analytic product that a professional analyst would deliver after doing the analysis.

A debrief is a maximum of 2000 words narrative describing your hypothesis about the situation at hand. Include in your narrative the relationships of the various players. If there are uncertainties, you can suggest possible next steps to clarify those uncertainties.

About the debrief (Grand Challenge only)

See the Task Descriptions for the current word count limit.

Include in your narrative the relationships of the various players. If there are uncertainties, you can suggest possible next steps to clarify those uncertainties. In the debrief you should distinguish between the facts located in the data and your interpretations about the synthesis and meaning of these different pieces. Do NOT describe the tools used nor discuss the process used, instead focus on convincing us that you UNDERSTAND the situation.

See a good example of debrief from the 2007 contest

Analysts who judged the past submissions told us that they consider if the debrief:

- Is written objectively
- Considers all available sources of intelligence (all datasets)
- Properly highlights caveats and express uncertainties or confidence in analytic judgments (see section on estimative language below).
- Properly distinguishes between underlying intelligence and analysts' assumptions, judgments
- Incorporates alternative analysis where appropriate
- Contains logical argumentation.

More specifically

- Provide sufficient evidence to support what you are saying.
- Do not speculate if you have no evidence.
- Do not make random assumptions.
- Do not make assumptions that are not clearly stated
- Report only what is important. If it is not important, then do not put it in the debrief.
- State what confidence you have in your judgments

Organization layout

- Provide a short introductory section to say what the debrief is about
- Immediately provide a 2-3 sentence summary of conclusions
- Present factual conclusions first, followed by any hypotheses.
- If you provide a methodology (how you did the analysis) section it should be kept simple and straight forward.
- Be short or at least let the reader find what they need to know in the first part of the report
- Make recommendations for further actions at the end of the report.

Writing Style
• Keep the writing neutral. Do not use words that are inflammatory.
• Do not write in the first person

Additional recommendations provided by the professional analysts.

Guidelines for Visualizations
• Use animations only to show an effect that does move over time. Give analysts control to manipulate the speed of the animation, including stopping it.
• Carefully select colors that are distinguishable. Consider showing quickly how the analyst can change the color combinations.
• Use appropriate and easy to interpret representations for properties such as size and distance in visualizations.
• Avoid repetitive interactions on the part of the analyst.
• Use space well in visualizations. Visualizations that are too dense can be difficult to interpret.
• Provide a way to backtrack or undo actions.
• Coordinating information in multiple windows is helpful, but make sure they are in close proximity.
• A visual display of the process used is excellent as it relieves the analyst from having to keep external notes.
• Use understandable labels and symbols
• Use the same scales in different visualizations where possible.
• In large, complex graphs it is difficult to judge the strength of an association if line thickness is the only indication.
• In order to compare visualizations, analysts may need to see them that side by side, not only serially.

Guidelines for Interactions
• Having to mouse over many items to read the information in tooltips is very time consuming, consider alternatives.
• Provide a means to filter complex visualizations
• Provide a way to drill down to the actual original information
• Minimize scrolling
• Provide basic functionality at the top level in menus
• Minimize the number of options that the user has to select to carry out basic functionality

Guidelines for Visual Analytic Systems
• If the system contains automation, it should be well balanced (used mostly for repetitive actions) and transparent to the user.
• Avoid requiring analysts to recall previous steps. Make that information available.
• Minimize the steps that the analyst has to take, especially the repetitive steps.
• Automate repetitive work but avoid over automation where the analyst does not understand what is happening
• If patterns are identified automatically by the software, the analyst needs to know what decision criteria have been used, and may need to adjust them
• Minimize the amount of data that analysts have to visually inspect

About Estimative Language [Reference - as accessed June 06, 2011.]

What We Mean When We Say: An Explanation of Estimative Language:
When we use words such as “we judge” or “we assess”—terms we use synonymously—as well as “we estimate,” “likely” or “indicate,” we are trying to convey an analytical assessment or judgment. These assessments, which are based on incomplete or at times fragmentary information are not a fact, proof, or knowledge. Some analytical judgments are based directly on collected information; others rest on previous judgments, which serve as building blocks. In either type of judgment, we do not have “evidence” that shows something to be a fact or that definitively links two items or issues.
Intelligence judgments pertaining to likelihood are intended to reflect the Community’s sense of the probability of a development or event. Assigning precise numerical ratings to such judgments would imply more rigor than we intend. The chart below provides a rough idea of the relationship of terms to each other.

[Remote Unlikely Even Chance Probably Likely Almost Certainly]

We do not intend the term “unlikely” to imply an event will not happen. We use “probably” and “likely” to indicate there is a greater than even chance. We use words such as “we cannot dismiss,” “we cannot rule out,” and “we cannot discount” to reflect an unlikely—or even remote—event whose consequences are such it warrants mentioning. Words such as “may be” and “suggest” are used to reflect situations in which we are unable to assess the likelihood generally because relevant information is nonexistent, sketchy, or fragmented.
In addition to using words within a judgment to convey degrees of likelihood, we also ascribe “high,” “moderate,” or “low” confidence levels based on the scope and quality of information supporting our judgments.

• “High confidence” generally indicates our judgments are based on high-quality information and/or the nature of the issue makes it possible to render a solid judgment.

• “Moderate confidence” generally means the information is interpreted in various ways, we have alternative views,

or the information is credible and plausible but not corroborated sufficiently to warrant a higher level of confidence.

• “Low confidence” generally means the information is scant, questionable, or very fragmented and it is difficult to make solid analytic inferences, or we have significant concerns or problems with the sources.