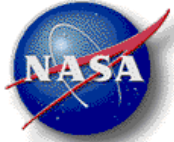


User Interfaces and Scheduling and Planning (UISP)

Rick Freedman
University of Massachusetts Amherst

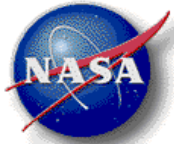
Jeremy Frank
NASA Ames Research Center



Why Are We Here?

We solicited papers and participation in this workshop to discuss the following themes:

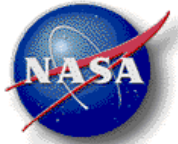
- User Interfaces for Planning and Scheduling Systems
- Planning and Scheduling to build better user interfaces (UIs)
- Emerging UI technology



Why Are We Here?

User Interfaces for Planning and Scheduling Systems:

- Increase usability of ICAPS derived technology.
- Stimulate UI-related automated planning research in the ICAPS community.
- Opportunities to collaborate with other communities (e.g. Human Computer Interaction).

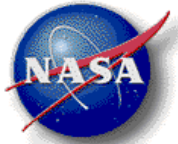


Why Are We Here?



Planning and Scheduling technology to build better UIs.

- ICAPS derived technology to build UI workflows.
- Automated reasoning systems to automatically generate the UI itself.



Why Are We Here?



Emerging UI technology

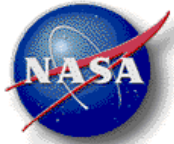
- Virtual Reality and Augmented Reality.
- Natural Language Processing.
- Haptics.



Ancient History (>10 years)



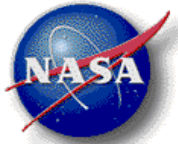
- Spoken language interfaces to AI planning
 - Dowding et al. 2002
 - DARPA CALO project (origins of Siri) (2005)
- Integrating automated reasoning and humans
 - Maldague et al. 1997, Myers et al. 1999, 2000, Klau et al. 2002, Anderson et al. 2000
- Automated reasoning to build UIs
 - Weld et al. 2003, Gajos et al. 2004
- ...and much more!



Not-So-Ancient History (within 10 years)



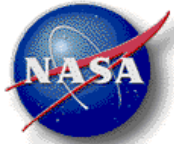
- Aerospace (ahem, NASA) Applications
 - Bresina et al. 2005, Aghveli et al., 2007, Deans et al. 2011, Meuleau et al., 2009, Frank et al. 2017
- Integrating automated reasoning and humans
 - Mohseni-Kabir 2015
- Planning visual search strategies for improved UIs
 - Chen et al. CHI 2015
- Human Robot Interaction
 - Nikolaidis et al., 2012, Lasota et al., 2015, Gombolay et al., 2017
- Knowledge Engineering Tools
 - Vaquero et al., 2007
- ...and much more!



Workshop overview



- 8 papers
 - 6 long, 2 short
- 2 invited talks
 - 1 academic, 1 industry
- 1 panel
 - Mix of perspectives
- Discussion
 - What next?



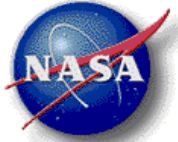
Some Videos:

NASA Exploration Ground Data System (long)

- <https://www.youtube.com/watch?v=CrDdtVEJyCk>

Orion Cockpit (short)

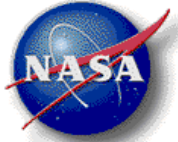
- <https://www.youtube.com/watch?v=cM4qKfNuFX4>



Panel: Google Doc



- <https://docs.google.com/document/d/13cYrbZEAMzyESO4FoEuJmKVS7mXBZyM-AZ5WgqNravM/edit>

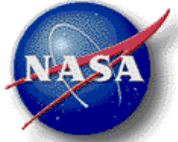


Let's get on with it, then!



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