NRI: INT: Balancing Collaboration and Autonomy for Multi-Robot Multi-Human Search and Rescue

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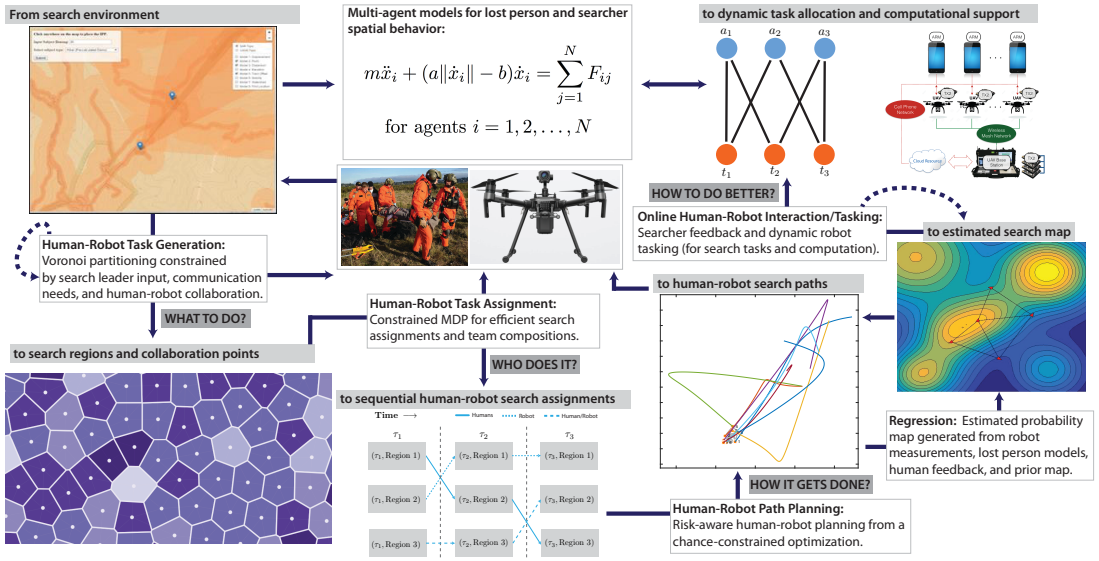
Challenge

- Enabling teams of human searchers and unmanned aerial vehicles to collaborate towards improving search outcomes and reducing human effort.

Solution

- Risk-aware human-UAV search planner.
- Agent-based lost person model.
- In-field computational backpack.
- Web-based SAR interface.



Project overview.

Scientific Impact

- Planning and control systems that autonomously gather information while adapting to uncertain human plans.

Broader Impact

- Volunteerism is in dramatic decline nationally and across Virginia, and thus UAVs could eventually supplement the lack of trained volunteers.

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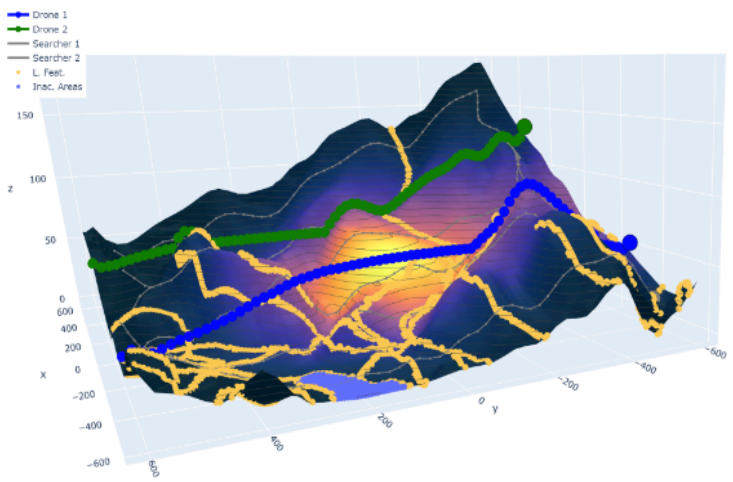
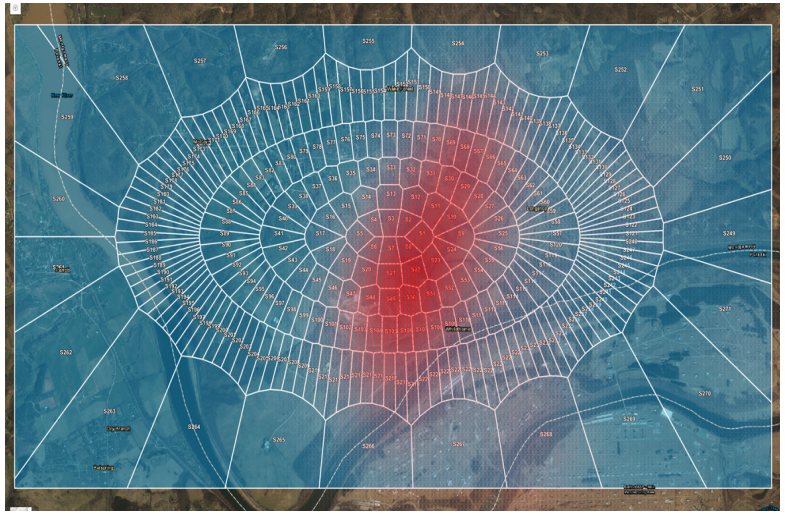
Summary of Current Results:



(a) H.M. State Park

Lost person modeling and human-UAV search planner simulation pipeline.

In-field computational backpack benchmarking.



Search and rescue interface with human factors studies.