

NRI: FND: COLLAB: Distributed Bayesian Learning and Safe Control for Autonomous Wildfire Detection

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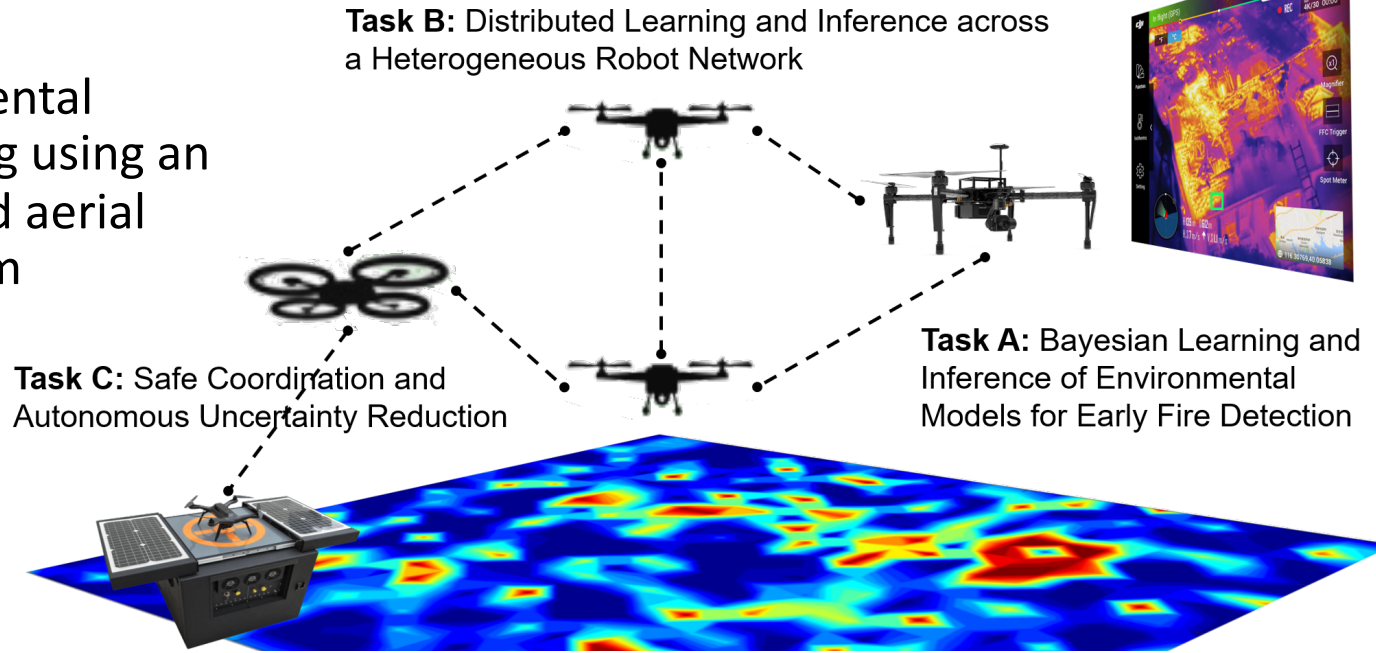
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Challenge

- Environmental monitoring using an unmanned aerial robot team



Solution

- **Task A:** Online multi-modal mapping (terrain, semantics, temperature, etc.)
- **Task B:** Distributed localization, communication, and persistent monitoring
- **Task C:** Nonlinear system control with joint stability and safety guarantees

Scientific Impact

- Develop fundamental robot autonomy capabilities that generalize to other areas of CPS research

Broader Impact

- Provide real-time data to weather and fire spread simulators
- Improved situational awareness for first responders Who will care?
- UCSD-SDSU collaboration to increase undergraduate participation in robotics research