CAREER: Toward Autonomous Decision Making and Coordination in Intelligent Unmanned Aerial Vehicles' Operation in Dynamic Uncertain Remote Areas

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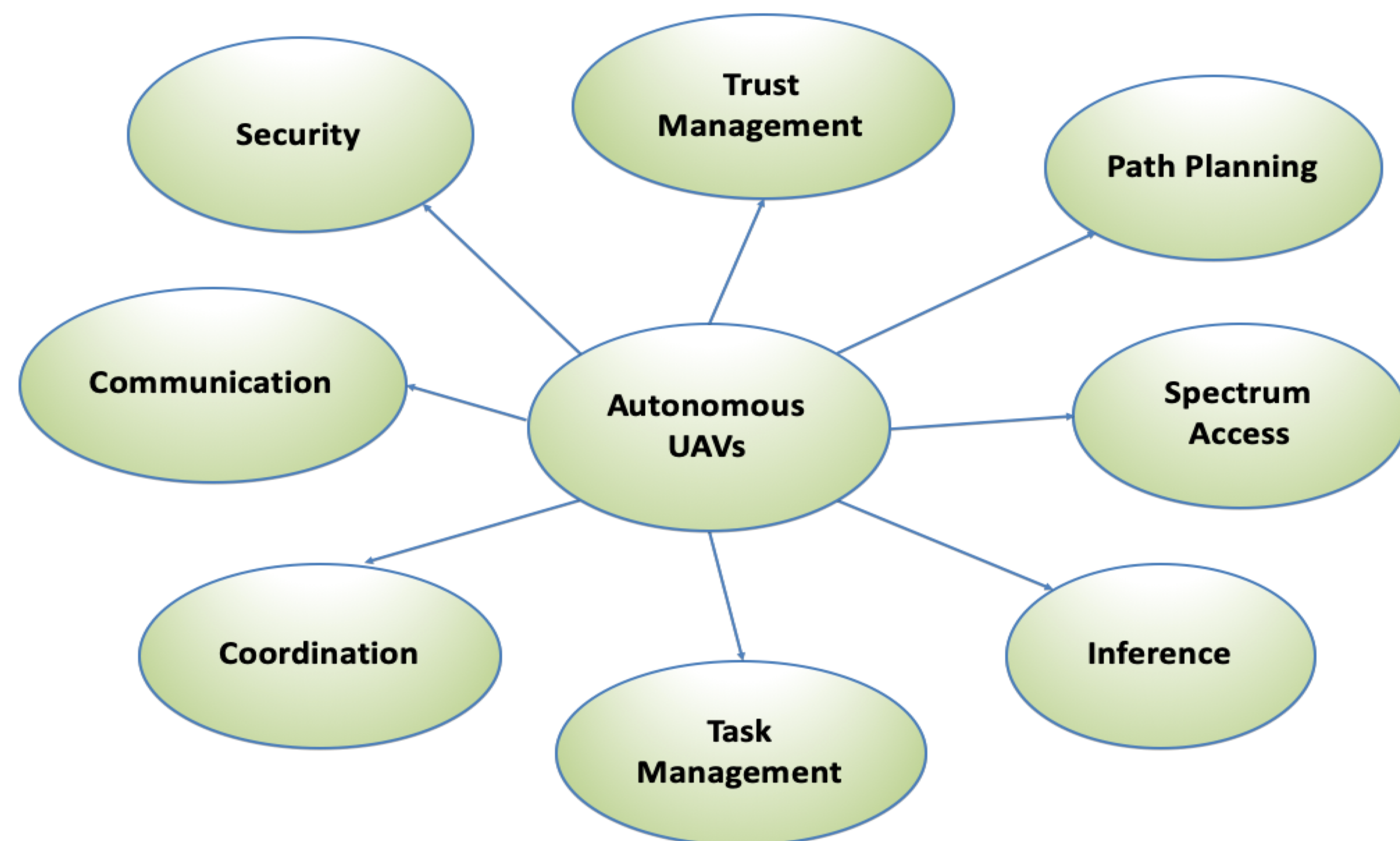
Challenge:

- Developing integrated communication, mission-planning, coordination and task management strategies in autonomous UAV networks

Solution:

- Agile data-driven decision making solutions for autonomous UAVs,

- Developing a hierarchical coordination, planning, and task allocation mechanism in a network of autonomous UAVs using leader-follower coalition formation,

- Developing reliable communications and dynamic spectrum sharing solutions to enable on-demand high data transmission rate.

Integrated Communication, Decision-making, Coordination and Trust Management in Autonomous UAV Networks

Broader Impact:

- Practical solutions for utilizing a network of small and autonomous UAVs for disaster management,

- Collaboration with Arizona with Arizona Department of Forestry and Fire Management to test and evaluate the developed solutions during prescribed fires,

- Involving several Hispanic and Indian American undergraduate students through collaboration with NAU's LSAMP program

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