

Activity - Apply the Scoping Matrix

Instructions

1. Consider the given research gap and proposed solution.

Example:

Gap: Current autonomous flight systems are unable to guarantee safety and performance across all aircraft platforms and operating conditions, particularly in the presence of modeling errors, environmental disturbances, hardware faults, and learning-based components. As autonomy becomes more widespread in aerospace systems, there is no unified approach for ensuring reliable operation in all scenarios.

Solution: Develop a unified, general-purpose control and verification framework that ensures safety, stability, and performance for all autonomous aerospace vehicles—across air, space, and atmospheric flight regimes—even under uncertainty, faults, and learning-enabled decision-making.

Feel free to instead consider the gap and proposed solution from your own research.

2. Categorize each component:

Problem: narrow / medium / broad

Method: standard / modified / new

Domain: toy / realistic / real-world

3. Answer the following questions:

- Are any components too difficult (i.e., towards the left)? Which could you reduce without losing interest?
- Are any components too easy? What needs to be increased to develop the idea into a thesis-worthy contribution?

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RES.16-9960 The Engineering Student's Guide to Effective Technical
Communication
Spring 2026

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