

Multi-Agent Reinforcement Learning for Coordinated Drone Search and Rescue Operations

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Abstract—

Index Terms—Multi-agent reinforcement learning, drone swarms, search and rescue, coordination, decentralized control

I. INTRODUCTION

- A. *Context*
- B. *Problem Gap*
- C. *Research Question*
- D. *Objectives*
- E. *Contributions*

II. RELATED WORK

- A. *Prior Work on Swarm Robotics and SAR Optimization*
- B. *Existing MARL Frameworks*
- C. *Research Gaps*

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- A. *Simulation Framework Design*
- B. *Individual Environments*
 - 1) *Environment A: [Name]*:
 - 2) *Environment B: [Name]*:
 - 3) *Environment C: [Name]*:
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 - 1) *Single-Agent Baseline*:
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- C. *Qualitative Observations*

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REFERENCES