

# Emergency Response Multi-Agent System

## Design Presentation

Team Name

October 31, 2024

# Outline

- 1 Introduction
- 2 City Selection
- 3 Environment
- 4 Tools
- 5 Agent Crews
  - Emergency Services
  - Firefighters
  - Medical Services
  - Forensics Team
  - Public Communications

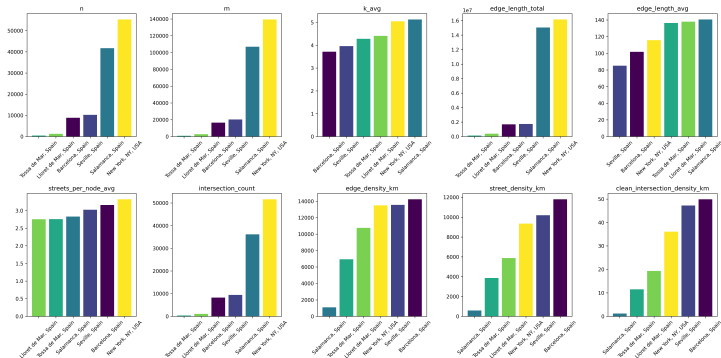
# Introduction

- Multi-agent system for fire-related emergencies in Lloret de Mar
- Five specialized response teams using CrewAI:
  - Emergency services
  - Medical services
  - Firefighters
  - Public communications
  - Forensics team

# City Selection

- Selection criteria
- Candidate cities
- Evaluation metrics
- Final selection: Lloret de Mar

# Map Analysis



# Environment Properties

- Accessibility: Partially Observable
- Determinism: Non-deterministic
- Episodicity: Non-episodic
- Dynamics: Dynamic
- Continuity: Continuous

# Agent Tools

- Communication Channel:
  - Enables **communication** between crews.
  - Each crew has a **facilitator** agent with access to it.
- Database Management:
  - Grants access to **persistent** data.
  - **Information** agents can read and update databases.
  - Other agents may query to **specialized knowledge** bases.

# Agent Crews Overview

Five specialized teams:

- 1 Emergency Services
- 2 Firefighters
- 3 Medical Services
- 4 Forensics Team
- 5 Public Communications



# Emergency Services

- Emergency Call Agent
  - Main task: Receive and assess calls
  - Type: Interface agent
- Notification Agent
  - Main task: Relay information
  - Type: Facilitator agent

# Firefighters

- Fire Chief
- Equipment Technician
- Fire Combatant

# Medical Services

- Medical Services Operator
  - **Facilitator** agent.
  - Capable of **communicating** with other crews.
- Hospital Coordinator
  - **Information** agent
  - In charge of **managing** hospital **resources**.
- Paramedic Teams
  - **Collaborative** agent
  - Deployed in **teams** to aid at the emergency site.

# Forensics Team

- Investigates causes and origins of fires
- Collects and analyzes evidence
- Documents findings for future prevention
- Collaborates with other emergency teams

# Public Communications

- Facilitator Agent
- Information Agent
- Article Writer
- Mayor
- Social Media Commentator

# References

- Key references from bibliography