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**Special Issue on Human-machine Fusion Decision-making for Emergency Handling**

Emergency decision depends on human-machine fusion decision. No matter the human-machine is in the same loop, or out of the loop, people need to monitor the operation status and results of the emergency system. The biggest characteristic of an emergency is that it is difficult to describe the situation of people and things in the event. Therefore, in a short period of time, decision-makers cannot obtain enough information to formulate perfect countermeasures to deal with emergencies. The correctness of the countermeasure depends on a fusion judgment between the decision-maker's cognition and the current situation. In addition, human-machine fusion decision-making also has a more important function to ensure that people can intervene in the operation direction and effect of emergency command and decision-making. In the future, the more important function of people outside the loop is to supervise and intervene the system operation. Therefore, the system must provide the way of intervention for the command and decision-making personnel. Therefore, the human-machine fusion decision-making under emergency conditions is particularly important.

In the face of emergencies, the decision of operators (such as pilots) always lags behind the dynamic behavior of emergencies. This asynchrony is manifested as perception delay, decision delay and execution delay. In the process of emergency decision-making and plan making, the system should provide people with ways to adjust the plan locally and select multiple plans, so that the plan made by the system is more in line with human intentions. Obviously, exploring the human-machine fusion decision-making behavior in emergencies can improve the correctness of decision-making.

The objective of this special issue is to present the latest progress and development of methods, techniques, and tools for emergency automation. Topics of interest include but are not limited to

- Human-machine fusion decision for emergency automation.
- Automatic monitoring, diagnosis and early warning of emergency scenarios.
- Automation of emergency response, decision-making recommendation and rescue dispatching.
- Robot-assisted disaster rescue technology.
- Robot-assisted disaster or disease treatment related technology
- Human-machine fusion for multi-modal coalition emergency response
- Human factors in emergency handling
- Human-computer interaction in emergency

**Important Dates**

- Manuscript submission: Jun. 30, 2023
- Completion of the first round review: Aug. 31, 2023
- Completion of the second round review: Oct. 31, 2023
- Final manuscripts due: Dec. 31, 2023
- Tentative publication date: Feb. 29, 2024:

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### **Paper Submission**

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