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SPECIAL SESSION ON Next-Gen AI: Bridging Quantum Computing and Intelligent Agents

SESSION ORGANIZERS:

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SESSION DESCRIPTION:

The advances in artificial intelligence have resulted in the creation of intelligent agent systems that are able to make autonomous decisions, learn, and adapt to complicated environments. Concurrently, quantum computing is on the rise as a dominant paradigm that provides exponential speed-ups for particular computations, particularly in optimization, search, and machine learning. This special session intends to investigate the synergy between these two revolutionary technologies. By incorporating quantum computation into the design and operation of intelligent agents, we may be able to develop next-gen AI systems that are more efficient, scalable, and able to solve problems previously deemed intractable.

This session invites original research, theoretical frameworks, and practical applications connecting quantum computing and intelligent agent systems. Subtopics can range from quantum machine learning for autonomous agents to hybrid quantum-classical AI architectures, quantum-facilitated decision-making processes, and applications to real-world areas like healthcare, finance, cybersecurity, and smart infrastructure. The session will also cover challenges in system design, simulation, scalability, and ethics. It is a platform for interdisciplinarity and collaboration among researchers in AI, quantum computing, systems engineering, and applied sciences with a view to promoting innovation at the borders of intelligent computing.

RECOMMENDED TOPICS:

- **Quantum machine learning for intelligent agents**
- **Hybrid quantum-classical AI systems**
- **Autonomous decision-making using quantum algorithms**
- **Applications of quantum-enhanced agents in healthcare, finance, robotics, etc.**
- **Security and privacy in quantum-AI systems**
- **Simulation and modeling of intelligent systems using quantum tools**