

Hybrid AI Agent Systems: Enabling Secure, Sustainable, and Scalable Enterprise Intelligence

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Abstract

Today's enterprise AI landscape is dominated by cloud-centric solutions—powerful but often expensive, energy-intensive, and constrained by privacy and security concerns. These limitations make it difficult for traditional enterprises to adopt AI at scale.

This talk introduces **Hybrid AI Agent Systems**, a transformative approach that distributes AI workloads intelligently across cloud and edge environments such as on-prem clusters, PCs, and IoT devices. In this architecture, **cloud AI** specializes in global reasoning, planning, and multi-agent orchestration, while **local AI** executes tasks securely and efficiently without exposing private data. Repetitive and high-frequency tasks can be cached and executed entirely on-device, delivering lower latency, reduced cost, and improved sustainability.

This hybrid collaboration enables **enterprise-grade AI** that is secure, responsive, energy-efficient, and easier to deploy across diverse operational environments. It opens the door for new classes of applications that combine powerful cloud intelligence with trustworthy local execution.

The talk will also highlight how hybrid AI agent systems align with a broader industry movement toward a unified **agentic computing layer**, where users interact through a single intelligent interface while cloud and edge agents coordinate seamlessly behind the scenes. This emerging model is poised to redefine how workplaces operate and how enterprise AI is delivered across devices.

Hybrid AI agent systems represent a practical, scalable path to bringing “AI Everywhere” into reality—and a foundation for the next generation of secure, sustainable, and truly intelligent enterprise solutions.

Bio

Dr. Olena (Jianfang) Zhu is the Chief AI Officer at Intel's Client Computing Group, leading AI solution development and AI strategy for PC clients. She drives collaborations with global partners to build next-generation hybrid AI agents and platform, including Intel's AI Super Builder for multi-agent, hybrid collaborative AI between local and cloud. Dr. Zhu is also an Adjunct Professor at Purdue University. She has authored 50+ papers, holds 40+ U.S. patents, and is recognized with multiple industry awards.

Host

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