

Session theme – Forum Innovation 2025

Autonomous AI Innovators: When Machines Drive Systemic Innovation

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Description of the theme:

The landscape of innovation is shifting as Artificial Intelligence (AI) systems evolve from tools that enhance human creativity to autonomous innovators—AI systems capable of independently generating novel ideas, designs, or solutions without direct human intervention (Kaplan & Haenlein, 2019). Unlike traditional AI, which primarily functions as a decision-support tool augmenting human creativity, autonomous innovators exhibit self-directed problem-solving, adaptive learning, and the ability to create, refine, and implement innovations across various domains. Recent advances in machine learning and neural networks now enable AI to autonomously contribute to art, music, innovative products, and scientific discoveries (Boden, 2016). This transformative capability challenges traditional notions of creativity and raises critical questions about ownership, legal protection, and the economic impact of AI-generated works (Floridi & Chiriatti, 2020).

This thematic track explores the implications of autonomous AI on industries, intellectual property, and economic structures. By investigating how AI can drive systemic innovation, we aim to understand and prepare for a future where machines are active contributors to innovation ecosystems (Brynjolfsson & McAfee, 2017). The track will analyze AI's potential across sectors (Agrawal et al., 2019), its impact on organizational structures and industry dynamics (Wilson & Daugherty, 2018), and the legal and ethical challenges it presents (Bazin, 2024). We will also discuss strategies for integrating AI into innovation systems, fostering synergy between human and AI contributions, and proposing actionable solutions for managing this transformative period (Brem & Riviuccio, 2024). Interdisciplinary dialogue among researchers, practitioners, policymakers, and ethicists (Bazin, 2024) will ensure responsible adoption of AI-driven innovation, maximizing societal benefits while upholding ethical standards.

Potential Research Topics

1. *Technological Foundations of Autonomous AI Innovation*
 - Advances in generative AI models and their applications across industries.
 - Role of deep learning and reinforcement learning in enabling autonomous creativity.
2. *Impact on Industries and Organizations*
 - AI-driven innovation in healthcare, manufacturing, and creative industries.
 - Reshaping organizational structures and workforce dynamics.
3. *Legal and Intellectual Property Challenges*
 - Ownership and protection of AI-generated inventions and creative works.
 - Reforming intellectual property frameworks to accommodate AI contributions.
4. *Economic and Market Implications*
 - Competitive advantages and disruptions caused by AI innovators.
 - Emergence of new business models and global value chain transformations.
5. *Ethical and Societal Considerations*
 - Balancing AI-driven efficiency with preserving human creativity.
 - Addressing societal acceptance and trust in autonomous AI.
6. *Integration Strategies for Human-AI Collaboration*
 - Best practices for integrating AI systems into innovation processes.
 - Leadership and change management for navigating organizational adaptation.
7. *AI in Creative Fields and Cultural Evolution*
 - The role of AI in transforming art, music, literature, and design.
 - Societal perceptions of creativity and originality in AI-generated works.

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- Boden, M. A. (2016). *AI: Its Nature and Future*. Oxford University Press.
- Brem, A., & Riviuccio, G. (2024). Artificial Intelligence and Cognitive Biases: A Viewpoint. *Journal of Innovation Economics & Management*, 44, 223-231.
- Brynjolfsson, E., & McAfee, A. (2017). *Machine, Platform, Crowd: Harnessing Our Digital Future*. W. W. Norton & Company.
- Floridi, L., & Chiriatti, M. (2020). GPT-3: Its nature, scope, limits, and consequences. *Minds and Machines*, 30(4), 681–694.



Kaplan, A., & Haenlein, M. (2019). Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. *Business Horizons*, 62(1), 15–25.

Wilson, H. J., & Daugherty, P. R. (2018). Collaborative intelligence: Humans and AI are joining forces. *Harvard Business Review*, 96(4), 114–123.

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