P1 - A semiotic perspective of AI in R&D Management

1. IMPACT of AI

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Track summary: Greenspan's coined expression "irrational exuberance" might also describe the rapid uptake of Generative AI (GenAI). This track takes a critical view of GenAI and its evolution from the philosophical roots of Natural Language Processing (NLP), which using Large Language Models (LLMs) only predict semantic probabilities. Because semantics is only one part of communications, GenAI cannot be aware of the interpreter's (human or otherwise) sensemaking models of the relationship between object and sign, as described by triadic Peircean semiotics - the study of signs. Despite trends of LLM products like Google NotebookLM to "ground" LLMs from user content, multiagent 'society of minds,' more guard-rails - 'Claude,' more efficient techniques than transformers - RETNET, semantic analysis remains GenAI's fundamental constraint.

This track invites papers which can put the evolution of NLP and GenAI in perspective, compared to Artificial General Intelligence (AGI) or strong AI, which strives for, but which has not yet realized a fully enabled semiotic strong AI. Each submission should focus on R&D management for a particular industrial or service sector, analyzing the sector's top ten or so R&D Chatbot and AI offerings. The literature review should link AI articles and studies to semiotics and NLP's evolution, and about the sector's AI implementations and challenges that ungrounded GenAI Chatbots and LLMs raise. Practically, for the selected AI offerings, the findings and recommendations sections should focus on how to apply human procedural, or other workarounds for what a "digital twin" representation can and cannot do within the current limits of GenAI LLMs.