Dipartimento di
Informatica, Sistemistica
e Comunicazione

ReGAInS

SEMINAR ANNOUNCEMENT

Tuesday November 17th, 2026

at 05:00 pm
Room "Sala Seminari" - Abacus Building (U14)
Speaker Fernando Spadea

Semantic Web Foundations for Personalized AI: Knowledge Graphs, Decentralized Recommendation, and Bursting Filter Bubbles

Abstract
Fernando's research explores the intersection of personalized AI, knowledge graphs, lightweight large language models, and federated learning, with an emphasis on the role of Semantic Web technologies in supporting intelligent recommender systems. Drawing on work in movie, recipe, and financial recommendations, his research addresses evolving personal knowledge graphs, continual model adaptation through user feedback, and decentralized learning without centralizing personal data. Another area of focus is how structured personal and domain knowledge can ground model outputs through efficient retrieval of relevant subgraphs within limited model contexts. A complementary research direction explores the potential of knowledge graph inversion for bursting filter bubbles, raising questions about how personalized systems can balance relevance with diversity, discovery, and exposure to new perspectives. Together, these themes provide a basis for discussing how knowledge-driven AI systems can adapt to individual users, preserve data privacy, and support personalization that both reflects and broadens users' interests.

Short bio
Fernando Spadea is a fifth-year PhD student in Computer Science at Rensselaer Polytechnic Institute, advised by Professor Oshani Seneviratne. His research focuses on personalized recommendations in decentralized systems, particularly in financial and Web3 applications. His work brings together knowledge graphs, open-weight large language models, federated learning, blockchain analytics, and privacy-preserving methods to investigate how intelligent systems can learn from distributed personal and financial data without requiring its centralization. His recent research includes knowledge-graph-grounded recommendations, decentralized model adaptation, and predictive risk management for decentralized finance. More broadly, he aims to develop adaptive systems that preserve user control while providing useful and context-aware recommendations.

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