UNIVERSITÀ DEGLI STUDI DI BARI ALDO MORO

Seminar Announcement

Collab
Laboratorio di Ricerca per la Collaborazione in Rete

The Seminars on "Information Technology Outlook" - PhD Program in Computer Science and Mathematics

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15:30

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Dependency Management in the Era of Foundation Models: From Codeware to Agentware Ecosystems

Abstract. Dependency management and software reuse have historically focused on deterministic, modular code components with well-defined interfaces, typically maintained within structured software ecosystems. However, the emergence of foundation models (FMs) introduces a fundamental shift. Reuse is no longer constrained to code libraries but extends to heterogeneous artifacts such as data, models, prompts, and agentic architectures, for which behaviour is often non-deterministic and interfaces are context-sensitive. At the same time, software development practices are being reshaped by increasing reliance on FM-based tools, with reuse being mediated by the developer's ability to articulate intent and the model's capability to generate appropriate responses. This thought-provoking presentation suggests that this transition challenges foundational dependency management practices such as versioning and backward compatibility, requiring an accommodation of the dynamics of FM-centred ecosystems. It also suggests a change from code-centric to interaction-centric reuse, rethinking dependency management to adapt to new development paradigms.

Bio. *Filipe Roseiro Cogo is a Software Engineering Researcher at the Centre for Software Excellence, Huawei Canada, working on the intersection between Foundation Models and Software Engineering. His research work has been published in prominent venues in the area, such as TSE, EMSE, TOSEM, ICSE, and FSE. He is currently co-organizing the ICSE'26 Industry Challenge track and serving as an associate editor for the Springer Automated Software Engineering journal. Filipe has more than ten years of teaching experience in Computer Science and received his Ph.D. from the School of Computing at Queen's University, Canada, in 2020. More info at https://www.filipecogo.pro.*