

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



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Sala Consiglio 7° floor
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A Decade of Research in Sustainability of Open Source: From Onboarding and People to Governance, and AI

Open source software underpins much of the world's digital infrastructure, yet its sustainability remains fragile. Communities depend on a small number of contributors who face overload and burnout, while newcomers struggle with technical, social, and cultural barriers to entry. In this talk, I share lessons from over a decade of research on these challenges, tracing a path from onboarding and mentorship to governance and AI-assisted community support. I will reflect on what we have learned about restructuring governance in real-world projects, and on cross-project patterns that reveal how roles, responsibilities, and authority are documented — surfacing phenomena such as role drift and the Maintainer Paradox. I will then turn to AI as a potential ally for sustainability, discussing our collaboration with Mozilla on retrieval-augmented language models for developer support, and tools that help connect students to meaningful contribution opportunities. I will close with open questions about accountability, invisible labor, and the human-AI division of work in open source.

Igor Steinmacher is an Associate Professor at Northern Arizona University (USA), where he leads the RESHAPE Lab. He has been engaged with FOSS since 2003 — first as a co-organizer of FISL in Brazil, and since 2011 as a researcher studying onboarding, mentorship, governance, and sustainability in opensource communities. His work has been published at venues such as ICSE, FSE, CSCW, TSE, and TOSEM, and is currently funded by the U.S. National Science Foundation. He has been working with FOSS communities including data.table, JabRef, and Mozilla to bridge empirical research and real-world community practice.