Einladung zum Gastvortrag

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On verifying computational systems. From functional to non-functional properties

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The history of formal verification traces an evolving understanding of computational correctness. Early approaches treated programs as abstract and fully specified artefacts, defining correctness as input–output conformity grounded in mathematical proof. With concurrency and large-scale systems, verification expanded to address non-determinism, introducing temporal and probabilistic notions of correctness. In the era of machine learning and AI, systems are opaque, adaptive, and embedded in sociotechnical contexts: correctness now extends beyond functional behaviour to non-functional properties such as trustworthiness, fairness, transparency, and responsibility. We overview this trajectory to show that the central question of formal verification is no longer only whether a system computes correctly, but whether its behaviour can be formally shown to be trustworthy and responsibly governed.

CV

Giuseppe Primiero is Professor of Logic with the Logic, Uncertainty, Computation and Information Lab in the Department of Philosophy at the University of Milan, Italy. He acts as Scientific Director for PHILTECH, Research Center for The Philosophy of Technology and as Programme Leader for the Master's Degree in Human-Centered AI. He is co-founder and Chief Research Officer of MIRAI. Giuseppe works in the formal modeling and verification of multi-agent systems, to evaluate properties of trustworthiness, fairness and responsibility in AI.