Turning Law into Micro-Simulation Code with the Catala Programming Language

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Abstract :
Software called legal expert systems are used around the world by private and public organizations to compute taxes. A bug in such programs can lead to tax miscalculations and heavy legal and democratic consequences. Yet, increasing evidence suggests that some legal expert systems may not meet satisfying criteria to be in compliance with the law. Moreover, they are difficult to adapt to the continuous flow of new legislation just by using traditional software development processes. To prevent further software decay and reconcile these systems with the growing demand for algorithmic transparency and economic micro-simulation of reform impact, we present a solution built by lawyers and computer scientists : a new programming language, Catala, coupled with a pair programming development process.