RETHINKING LEGAL PROBABILISM

Rafał Urbaniak

The **goal of this project** is to **develop a probabilistic modelling method of handling the multiplicity of items of evidence, hypotheses and theories of what happened, and the resulting decisions in the court of law**. In light of the current criticism of the probabilistic approach to such issues, such a method should (1) be **sensitive to the argumentative structure** involved, and (2) capture the idea that in a legal context we are dealing with a **class of competing narrations**.

The point of departure is to represent narrations as bayesian networks enriched with additional layer of information as to which nodes correspond to evidence, and which are binary narration nodes. **The key idea is that with such bayesian networks as building material, various features requested by the critics (such as coherence, resiliency, missing evidence, explaining evidence, or ways to handle a multiplicity of proposed narrations) can be explicated in terms of corresponding properties of, operations on, and relations between bayesian networks.**

The output will be a **unifying extended probabilistic model embracing key aspects of the narrative and argumentative approaches, with implementation in the programming language R.** What the project will uniquely bring to the table is joining the familiarity with epistemological debates, familiarity with the details of evidence assessment in legal cases and technical skill to programmatically implement, simulate and test various theoretical moves.