Value-Based Argumentation Frameworks and Judicial Moral Reasoning

Authors : Sonia Anand Knowlton

Abstract : As the use of Artificial Intelligence is becoming increasingly integrated in virtually every area of life, the need and interest to logically formalize the law and judicial reasoning is growing tremendously. The study of argumentation frameworks (AFs) provides promise in this respect. AF's provide a way of structuring human reasoning using a formal system of non-monotonic logic. P.M. Dung first introduced this framework and demonstrated that certain arguments must prevail and certain arguments must perish based on whether they are logically "attacked" by other arguments. Dung labelled the set of prevailing arguments as the "preferred extension" of the given argumentation framework. Trevor Bench-Capon's Value-based Argumentation Frameworks extended Dung's AF system by allowing arguments to derive their force from the promotion of "preferred" values. In VAF systems, the success of an attack from argument A to argument B (i.e., the triumph of argument A) requires that argument B does not promote a value that is preferred to argument A. There has been thorough discussion of the application of VAFs to the law within the computer science literature, mainly demonstrating that legal cases can be effectively mapped out using VAFs. This article analyses VAFs from a jurisprudential standpoint to provide a philosophical and theoretical analysis of what VAFs tell the legal community about the judicial reasoning, specifically distinguishing between legal and moral reasoning. It highlights the limitations of using VAFs to account for judicial moral reasoning in theory and in practice.