

Learning Rules for Ethical Customer Service

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ABSTRACT

Codes of ethics are abstract rules. These rules are often quite difficult to apply in real situations. In this work we present a new approach based on Answer Set Programming and Inductive logic Programming for monitoring the employees behavior w.r.t. ethical violations of their company's codes of ethics.

KEYWORDS

Ethical Reasoning, Answer Set Programming, Inductive Logic Programming, Codes of Ethics

1 INTRODUCTION

Ethics in customer dealings present the company in a good light, and customers will trust the company in the future. Ethics improves the quality of service and fosters positive relationships. Many top leading companies have a booklet called "code of conduct and ethics" and new employees are made to sign it. However, enforcing codes of conduct and ethics is not an easy task. These codes being mostly abstract and general rules e.g. confidentiality, accountability, honesty, inclusiveness, empathy, fidelity, etc., they are subject to interpretations and may have different meanings in different contexts. It is impossible for experts to define intermediate rules to cover all possible situations. All the above mentioned reasons make learning from cases and generalization crucial for judgment of future cases and violations. In this work, we propose an approach to address the problem of evaluating the ethical behavior of customer service employees for violations of the codes of ethics and conduct of their company. Our approach is based on Answer Set Programming (ASP) and Inductive Logic Programming (ILP).

2 RELATED WORK

ASP as a purely declarative nonmonotonic logic paradigm has been used for ethical reasoning in a number of research works. Many ethical theories and conceptions were formalized and implemented using ASP in [2]. However, these works only permit to judge an option with respect to a single ethical principle. It doesn't handle the conflicting decisions given by different theories, i.e. doesn't provide a final decision for the agent about what it should do as a result. Pereira and Saptawijaya have proposed the use of different logic-based features for representing diverse issues of moral facets [3]. However, in their work there is no account for causality and ethical responsibility because the action and its consequences are not dynamically linked. In [4], Sergot provide a proposal for handling an ethical dilemma based on 'Prioritized Defeasible Conditional Imperatives' and implemented his proposal in ASP.

In another direction, ILP was used as a machine learning technique to discern ethical principles that resolve ethical dilemmas due to conflicting obligations and duties, in [1].

3 PROPOSED APPROACH: HOW CAN ..

An important question to ask here is how can the company's managers evaluate the ethical behavior of their employees given these abstract rules?. To achieve this end, and help managers to have detailed rules in place for monitoring the behavior of their employees at customer service for violations of the company's ethical codes, we propose an approach for generating these detailed rules of evaluation from interactions with customers. So, the new codes of ethics to be used for ethical evaluation are a combination of the existing clear codes (those that give a clear evaluation procedure that can be deductively encoded using ASP) and the newly generated ones. We use Answer Set Programming (ASP) Language as the knowledge representation and reasoning language. Rules required for ethical reasoning and evaluation are learned using ILP. The inputs to the system are a series of scenarios in the form of requests and answers, along with the ethical evaluation of the response considering each particular situation. The system remembers the facts about the narratives and the annotations given to it by the user, and learns to form rules and relations that are consistent with the evaluation given by the user of the responses to the given requests.

4 CONCLUSION

Combining ASP with ILP for modeling ethical agents provides many advantages: increases the reasoning capability of our agent; promotes the adoption of hybrid strategy that allow both topdown design and bottom up learning via context sensitive adaptation of models of ethical behavior; allows the generation of rules with valuable expressive and explanatory power which equips our agent with the capacity to give an ethical evaluation and explain the reasons behind this evaluation. In other words, our method supports transparency and accountability of such models, which facilitates instilling confidence and trust in our agent. Furthermore, in our opinion and for the sake of transparency, evaluating the ethical behavior of others should be guided by explicit ethical rules determined by competent judges or ethicists or through consensus of ethicists. Our approach provides support for developing these ethical rules.

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