FAIRPLAY: USING GENAI TO FORGE FAIRER SOCIETAL AGREEMENTS

A PREPRINT

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ABSTRACT

John Rawls' theory of *justice as fairness* remains a pivotal framework in understanding societal contracts and the fair administration of justice. While highly influential, key concepts from Rawls' framework for comparative justice, such as the original position and the veil of ignorance, the difference principle, equal liberty and opportunity, and moral alignment between agents and their society have proven difficult to realize in practice. In this paper, we present FairPlay, a novel approach that uses Generative Artificial Intelligence (GenAI) agents to forge fairer societal agreements in full compliance with Rawls' requirements. To assess the performance of FairPlay, we analyze and evaluate prenuptial agreements. Our results show that FairPlay is able to recognize and address injustice in human made agreements, and propose reasonable mitigation measures to produce fairer contracts. We discuss possible extensions beyond prenuptial agreements, such as lease agreements, terms and conditions, etc. While far from a standalone tool, and liable to the same vulnerabilities that a human lawyer is exposed to, such as deception or non disclosure of key information, we believe that FairPlay has the potential to revolutionize the way that agreements are made and enforced in society, reduce systematic inequalities in the access to quality legal advise, and to ultimately help realize Rawls' vision of a fairer society.

Keywords Generative Artificial Intelligence · Multi-Agent Architecture · Distributive Justice · Fairness · Bilateral Contracts · Rawlsian · 'John Rawls' · Society · Algorithm · Algorithmic Justice · Social Contract

1 Introduction

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2.1 Headings: second level

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$$\xi_{ij}(t) = P(x_t = i, x_{t+1} = j|y, v, w; \theta) = \frac{\alpha_i(t) a_{ij}^{w_t} \beta_j(t+1) b_j^{v_{t+1}}(y_{t+1})}{\sum_{i=1}^{N} \sum_{j=1}^{N} \alpha_i(t) a_{ij}^{w_t} \beta_j(t+1) b_j^{v_{t+1}}(y_{t+1})} \tag{1}$$

2.1.1 Headings: third level

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3 Examples of citations, figures, tables, references

3.1 Citations

Citations use `natbib`. The documentation may be found at

`http://mirrors.ctan.org/macros/latex/contrib/natbib/natnotes.pdf`

Here is an example usage of the two main commands (`citet` and `citep`): Some people thought a thing [Kour and Saabne, 2014a, Keshet et al., 2016] but other people thought something else [Kour and Saabne, 2014b]. Many people have speculated that if we knew exactly why Kour and Saabne [2014b] thought this...

3.2 Figures

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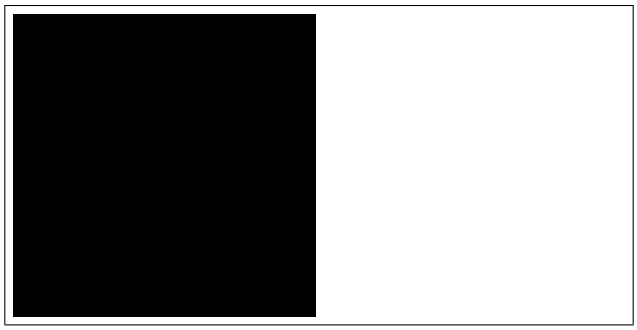

Figure 1: Sample figure caption.

Table 1: Sample table title

	Part	
Name	Description	Size (μm)
Dendrite	Input terminal	$\sim$100
Axon	Output terminal	$\sim$10
Soma	Cell body	up to 10^6

add footnotes. [1] Sed feugiat. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Ut pellentesque augue sed urna. Vestibulum diam eros, fringilla et, consectetuer eu, nonummy id, sapien. Nullam at lectus. In sagittis ultrices mauris. Curabitur malesuada erat sit amet massa. Fusce blandit. Aliquam erat volutpat. Aliquam euismod. Aenean vel lectus. Nunc imperdiet justo nec dolor.

3.3 Tables

See awesome Table 1.

The documentation for `booktabs` ('Publication quality tables in LaTeX') is available from:

`https://www.ctan.org/pkg/booktabs`

3.4 Lists

- Lorem ipsum dolor sit amet
- consectetur adipiscing elit.
- Aliquam dignissim blandit est, in dictum tortor gravida eget. In ac rutrum magna.

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[1] Sample of the first footnote.