Anoma Research Topics | TECHNICAL REPORT

Awesome Title

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Abstract

This is the abstract of the paper. It should be a single paragraph.

Keywords: keyword1 ; keyword2 ; keyword3 ;

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Contents

1. Introduction

This document is an example of using various LaTeX features for writing ARTs.

2. Text

Regular text.?! 0-123+456*789/0

`Monospace text.?! 0-123+456*789/0!`

*Italic text.?! 0-123+456*789/0!*

Bold text.?! 0-123+456*789/0!

3. Math Equations

You may want to display math equations in three distinct styles: inline, numbered or non-numbered display. Each of the three are discussed in the next sections.

3.1. Inline (In-text) Equations

A formula that appears in the running text is called an inline or in-text formula. It is produced by the **math** environment, which can be invoked with the usual `\begin, ... \end` construction or with the short form `\$ ... \$`. You can use any of the symbols and structures, from α to ω, this section will simply show a few examples of in-text equations in context. Notice how this equation: $\lim_{n\to\infty} x = 0$, set here in in-line math style, looks slightly different when set in display style. (See next section).

3.2. Display Equations

A numbered display equation—one set off by vertical space from the text and centered horizontally—is produced by the **equation** environment. The **displaymath** environment produces an unnumbered display equation.

Again, in either environment, you can use any of the symbols and structures available in LaTeX@; this section will just give a couple of examples of display equations in context. First, consider Equation 1, shown as an inline equation above:

$$\lim_{n\to\infty} x = 0 \tag{1}$$

Notice how it is formatted somewhat differently in the `displaymath` environment. Now, we'll enter an unnumbered equation:

$$\sum_{i=0}^{\infty} x + 1$$

Note some fine points concerning `mathit` and how math and text fonts are different sometimes.

just math	$brown fox$		
mathit	$\mathit{brown fox}$		
textit	*brown fox*		
textbf	**brown fox**		
mathbf	$\mathbf{brown fox}$		
mathrm	$\mathrm{brown fox}$		
textrm	brown fox		
boldsymbol	$\boldsymbol{brown fox}$	$\boldsymbol{\partial \times \sum_i}$	
		$\partial \times \sum_i$	just math
text mono spaced	sstt		
math mono spaced	$\mathtt{sstt}$		

3.2.1. More information

A numbered display equation—one set off by vertical space from the text and centered horizontally—is produced by the **equation** environment. An unnumbered display equation is produced by the **displaymath** environment.

Further details. Again, in either environment, you can use any of the symbols and structures available in LaTeX@; this section will just give a couple of examples of display equations in context. First, consider (1), shown as an inline equation above:

4. Math Tests

Definition 1 (Heterogeneous Validity [KS24]). *A consensus execution is* valid *if all decided values were proposed in that execution. A consensus protocol is* valid *if all possible executions are valid.*

Characterization of the Imaginary Forms Theorem. Let $S = \{v_1, v_2, \ldots, v_k\}$ be a set of vectors in $\mathbb{R}^n$.

$$\perp$$

$$\begin{aligned} &(Blue, Red) \\ &\mathcal{ABCDEFGHIJKLMNOPQRSTUVWXYZ} \\ &\mathbb{ABCDEFGHIJKLMNOPQRSTUVWXYZ} \\ &\mathfrak{ABCDEFGHIJKLMNOPQRSTUVWXYZ} \\ &\mathscr{ABCDEFGHIJKLMNOPQRSTUVWXYZ} \end{aligned} \tag{2}$$

Consider $\mathcal{F}(S) = \sum_{i=1}^{k} \delta\left(v_i v_j w\right) \sigma_{i,j}$. If $\mathcal{F}(S) \leq \varepsilon$, then

$$\phi(S,\alpha) = \frac{1}{2\pi i} \int_{-\infty}^{753} \frac{\tilde{W}_n(\gamma) \cos\left(\sqrt{x^2}\right)}{f'(x)R/a} dx = \det \begin{pmatrix} \alpha^2 & \Pi \\ \omega & x \otimes y \end{pmatrix}$$

Remark 2. If $\beta \in \Gamma$, then the form is undefined at the points in $S \cap \Gamma$, and the integral $l_l(i_1)$ diverges as $\varepsilon \longrightarrow 0$. This pathological behavior can be handled by taking $\Gamma \subseteq S$.

Graph three coloring is a common example used to introduce CSPs to new audiences. The goal is to color the nodes of a graph with three colors such that no two same-colored nodes touch.

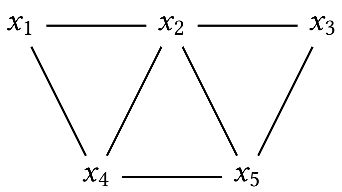
$$\forall c \in C, t \in E_{G,c}, \quad \prod_{i<a(c)} f_V(t_i) \in E_{H,c}. \tag{3}$$

$$\sum_{i=0}^{\infty} c \in C, t \in E_{G,c}, \quad \int_{i<a(c)} f_V(t_i) \in E_{H,c}. \tag{4}$$

The CSP itself consists of a single binary relation asserting the inequality between three elements, typically named after primary colors.

$$\neq\, = \{(Blue, Red), (Blue, Green), (Red, Blue), (Red, Green), (Green, Blue)\} \tag{5}$$

Graphs become instances by translating edges into binary relations. Take this graph as an example;



4.1. Corresponding CSP instance

We can simply list the edges using the inequality relation to produce the corresponding CSP instance;

$$x_1 \neq x_2 \wedge x_1 \neq x_4 \wedge x_2 \neq x_3 \wedge x_2 \neq x_4 \wedge x_2 \neq x_5 \wedge x_3 \neq x_5 \wedge x_4 \neq x_5 \tag{6}$$

A solution to the graph coloring problem is then an assignment of colors that satisfies the instance.

If we think about the structure of this graph, we notice that it has three triangles, the left and right side triangles (x_1, x_2, x_4) and (x_2, x_3, x_5), and the central triangle (x_2, x_4, x_5). Each must be a triple of distinctly colored points. The edge between x_4 and x_5 forces those two to have distinct colors, while the two side triangles share a color at x_2. These two observations force us to conclude that the left triangle has the colors of the right triangle flipped along the bisector going through x_2. If we arbitrarily select x_1 to be *Blue* and x_2 to be *Red*, we are then forced into the coloring;

$$\langle x_1 \rightarrow Blue; x_2 \rightarrow Red; x_3 \rightarrow Green; x_4 \rightarrow Green; x_5 \rightarrow Blue \rangle, \tag{7}$$

Role	Description
Authorizer	approves the resource consumption on the application level. The resource logic encodes the mechanism that connects the authorizer's external identity (public key) to the decision-making process
Annuler	knows the data required to nullify a resource
Creator	creates the resource and shares the data with the receiver
Owner	can both authorize and annul a resource
Sender	owns the resources that were consumed to create the created resource
Receiver	owns the created resource

Table 1. Resource-related roles.

which will satisfy this instance. We can place these colors back on the graph to verify the solution visually.

Citations are also possible, for example: [Goe24]

5. Concluding remarks

6. Acknowledgements

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A. Some extra stuff