Pre-questions for HeartDown Expert Study

1. How do you currently communicate mathematical topics informally (e.g. when discussing a project, long before preparing it for publication)? *

I may verbally describe it, if condition permits, I may use whiteboard to write or draw the concepts or formulas and related concepts.

2. How do you use verbal discussion, formalizing ideas in mathematical symbols, and writing code in a programming language? *

First I will try to figure out the formula, then sort out the variables I need, then I will use programming languages to express and test the formula.

3. Do you ever write math in an email or on slack? *

Yes, but it is not very convenient, especially in emails, It doesn't support subscript or superscript, I may need to write math in other software, render it, and then take a screenshot to share the concepts that I am trying to express.

4. What is your current process for preparing an academic paper or web page for publication? *

For academic paper I use LaTex, for personal academic blogs I use Markdown.

5. What tools do you use? *

pen and paper, markdown, latex, python jupyter notebook

6. What do you like about them? *

- pen and paper : I can write and draw freely. - markdown: once I write something I can export it in many formats, such as pdf, html, epub and even mobi. - latex: have to use it in academic environments. - python jupyter notebook : it can run the code along with the formatted text.

7. What do you dislike about them? *

- pen and paper: not digitized, may missing them easily. -markdown: like it a lot, only issue is different markdown software may render the math a little bit different. - latex: complicated commands, have to google it when want to do formatting for figures or text, and cannot control the rendered result. - python jupyter notebook :sometimes the code along with text makes it harder to read, and I have to open the notebook in certain software to read it

8. How much time do you estimate it takes to implement something correctly versus writing the math formally? *

I feel implementing something correctly will take more time than writing the math formally, if I have the math in hand, then I should be able to write that correctly in code, maybe I will need to look up some functions usage and data structure in the implementing process. But I haven't write down the math formally, I still need to figure that out in the implement process.

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