

Possible research areas

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My proposal last year was to create a program where users could input an expression or equation and the program would output the same expression simplified or the equation solved for a given variable. I'm not entirely sure what area of research this would fit under. When I mentioned my idea to relatives, they told me that to do that program correctly, I should know how to write a new language/compiler, "but that's okay, go ahead anyway." I doubt it's practical to research writing a compiler well enough to make my own, but if that's possible it could be a good research topic. Alternatively, if you could suggest another type of research under which this program would fit, that would also work.

If that project doesn't work out, a second possibility might be for me to work on fingerprint recognition or something along those lines. My father works at Mitretek and is about to publish a paper (co-authored) about how to rate fingerprint and face matchers based on accuracy and efficiency for the US government to use. While I don't want to work closely with him, I could use this research as a starting point and do something related, either in software testing or in picture recognition.

A third possible research area would be computer linguistics. I could attempt to write an artificial translation tool between French and English (and vice versa) or improve upon an existing program.