LaTeX for Lambda Students

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April 23, 2018

1 Introduction

LaTeX (sometimes written 'LaTeX' and always pronounced 'lay tech') is a document markup language. Besides being easy on the eyes, LaTeX is the industry standard for modern technical documents in mathematics, computer science, machine learning, and data science. At Lambda we believe strongly in learning by doing, so we'll just right into the assignment. First, go to overleaf.com and make an account. Create a new, blank project and delete any text that automatically comes in the document. Then visit the excellent site Getting to grips with LaTeX by Andrew Roberts and work through sections 1, 2, 9, and 10 inside that blank project. Now make another document with a header like the one on this page (use your own name and replace my organization's name with Lambda School). Inside that document, use everything you've learned to typeset the BAC-CAB rule from vector algebra

$$\vec{A} x \left(\vec{B} x \vec{C} \right) = \vec{B} x \left(\vec{A} x \vec{C} \right) + \vec{C} x \left(\vec{A} x \vec{B} \right) \tag{1}$$

and the following illustration of the chain rule:

$$\begin{aligned} \frac{\partial \sin\left(x^2 + xy\right)}{\partial x} &= \partial \frac{\sin\left(x^2 + xy\right)}{\left(x^2 + xy\right)} \partial \frac{\left(x^2 + xy\right)}{(x)} \\ &= \cos\left(x^2 + xy\right) \left(\partial \frac{x^2}{x} + \partial \frac{x}{y} y \right) \\ &= \cos\left(x^2 + xy\right) (2x + y) \end{aligned}$$

Pay attention to the small details:

- Parenthesis should be large enough for the objects inside of them (this can be automated!).
- Write sin, not sin. Write cos, not cos. In derivatives, write d, not d.