Mathematical Autobiography

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September 21, 2010

I was introduced to mathematics right from school days. Initially all the calculations in mathematics were fun but then slowly the anxiety to know its applications in real life started building in. The urge to know more about the subject attracted me towards it. My interest in the subject increased and I would discuss things with my teachers. This interest further led me to do a Bachelor's degree in Mathematics from the University of Mumbai. It was here that my appreciation towards the subject increased as I was exposed to more branches of mathematics. In my under graduation, I took a wide range of courses in applied and pure mathematics but my inclination was always more towards applied maths. The basics here helped me to build a strong foundation required further.

I went on to pursue a Master's degree in Mathematics from the University of Mumbai. During my under graduation and graduation, I covered topics in Linear Algebra, Group and Ring Theory, Measure theory, Topology, Real and Complex Analysis, Differential equations, Statistics, Numerical Analysis, Graph theory and Combinatorics. I also participated in maths quizzes and was selected for MTTS (Mathematical training and talent search program) for 2 years which is conducted by National board for higher mathematics. I attended a workshop on mathematics in I.I.T.

I also worked under a Chartered Accountant for 2 years as I wanted to know more about mathematical applications in finance. I learned a bit on how to apply mathematical knowledge to the outside world but I wanted to gain more experience and so I decided to pursue Master's in Ohio University in Fall 2009.I started my master's with the goal to gain more knowledge in applied math and apply myself in the real world so that I can make use of the knowledge I achieved in all these years. In my first year of master's here , I did courses in Statistics, Numerical Analysis, Differential equations ,Optimization and Economics. I also learned a little about programming in C, Java, C++ and Matlab. With all the courses that I have taken so far and will be taking in the next few quarters, I intend to have a career in actuaries or statistics.

Along with my studies in second year, I want to join the research group under Dr.Martin because I think that will give an opportunity to understand the research side and help me to learn more about the subject. It will also give me an opportunity to improve my interpersonal skills and make me more comfortable in group work. So I would like to have this experience along with my master's here.

In order to add vertical space you have to use "vspace"; for example, you could add an inch of space by typing `\vspace{1in}`, like this:

To get three lines of space you would type `\vspace{3pc}` ("pc" stands for "pica", a font-relative size), like this:

Notice that LaTeX commands are always preceeded by a backslash. Some commands, like `\vspace`, take arguments (here, a length) in curly brackets.

The second important thing to notice about LaTeX is that you type in various "environments"...so far we've just been typing regular text (except for a few inescapable usages of `\verb` and the centered, smallcaps, large title). There are basically two ways that you can enter and/or exit an environment;

this is the first way...

this is the second way.

Actually there is one more way, used above; for example, THIS WAY. The way that you get in and out of environment varies depending on which kind of environment you want; for example, you use `\underline` "outside", but `\it` "inside"; notice <u>this</u> versus *this*.

The real power of LaTeX (for us) is in the math environment. You push and pop out of the math environment by typing `$`. For example, $2x^3 - 1 = 5$ is typed between dollar signs as `$2x^3 - 1 = 5$`. Perhaps a more interesting example is $\lim_{N\to\infty} \sum_{k=1}^{N} f(t_k)\Delta t$.

You can get a fancier, display-style math environment by enclosing your equation with double dollar signs. This will center your equation, and display sub- and super-scripts in a more readable fashion:

$$\lim_{N\to\infty} \sum_{k=1}^{N} f(t_k)\Delta t.$$

If you don't want your equation to be centered, but you want the nice indicies and all that, you can use `\displaystyle` and get your formula "in-line"; using our example this is $\displaystyle\lim_{N\to\infty} \sum_{k=1}^{N} f(t_k)\Delta t$. Of course this can screw up your line spacing a little bit.

There are many more things to know about LaTeX and we can't possibly talk about them all here. You can use LaTeX to get tables, commutative diagrams,

figures, aligned equations, cross-references, labels, matrices, and all manner of strange things into your documents. You can control margins, spacing, alignment, *et cetera* to higher degrees of accuracy than the human eye can percieve. You can waste entire days typesetting documents to be "just so". In short, LaTeX rules.

The best way to learn LaTeX is by example. Get yourself a bunch of .tex files, see what kind of output they produce, and figure out how to modify them to do what you want. There are many template and sample files on the department LaTeX page and in real life in the big binder that should be in the computer lab somewhere. Good luck!