The Undergrad's Guide to AI - Intro

If you're reading this then you're probably thinking about starting to learn the underpinnings of Artificial Intelligence / Data Science / Data Analytics / Machine Learning / Deep Learning / Reinforcement Learning / Computer Vision / Natural Language Processing / etc. All these terms are very prevalent and used interchangeably throughout industry and academia and we'll go into the details of what all the fuss is about.
Or it may be that you're already somewhat ahead in this regard but are looking for specific answers to new questions that keep coming up as you progress through the data scientist's journey. In any case, since most colleges don't offer good courses or programs for undergraduate students wanting to enter data science, it becomes a daunting task for aspiring students to really figure out:

- What to really learn ?
- What not to learn ?
- What their job prospects are ?
- What kind of AI work happens in the industry ?
- Whether research is right for them ?
- Is it hard? (Short answer: No. Long answer: Yes)
- and so many other things ...

These questions are generally answered by college seniors who've done this before. And if you're unlucky like I was, you'd have to figure out most of this yourself potentially costing months of wasted/misdirected effort. A member of BITS ACM reached out to me to write a blog for their website on the topic of AI a few days ago. Naturally, I felt the need to write what I get asked about the most from college juniors instead of a technical post (if you have to repeat yourself, write it down!).

What follows will be a series of blogs where I try to answer most of the questions that people ask me and the ones I believe you will come across (or should think about) as you move ahead in your learning journey. The assumption will be that you don't know anything about AI, although my experience suggests that this will be very helpful even for intermediate learners. I will be trying to answer these questions:

- What's all the jargon about? Understanding the difference in Artificial Intelligence / Data Science / Data Analytics / Machine Learning / Deep Learning / Reinforcement Learning all of which vary with context. (and what to pursue based on your interests)
- Learning:
    - How to learn: choosing the right online courses (and identifying the bad ones).
    - What about books ?
    - Choosing the right frameworks because there's no one-fits-all. (PyTorch / Tensorflow / etc.)
    - Moving on from the "I know ML!" phase. You don't, yet.
    - Accelerate your learning: papers / docs / **Twitter** / Newsletters / Kaggle.
    - Wait, Twitter? Seriously?
    - What about learning web development on the sides ?
- Applying what you've learned:
    - Choosing the right projects to work on.
    - To Kaggle or not to Kaggle, that is the question?
    - Escaping the learning hell.
- Career:
    - What are the options? (Research vs Product)

    - Finding the right internships
    - The reality with AI jobs for (just) undergrads
    - Possible future pathways. (Industry / Academia)
    - Branding yourself: blogging
- Random advice that I couldn't group anywhere else:
    - How coding for data is very different from coding in general.
    - Random tools / hacks to make your data life easy.
    - Should you get an expensive GPU setup for Deep Learning ?
    - Staying updated.

Throughout the series, pardon me, but I'll be trying to stick to bullet points as far as possible. I have too much to write, you have a lot to read on the internet, and all of us have too little time. This will help me convey much more information in a significantly shorter and effective format.

This post will be updated and relevant links will be added as and when I write more articles (will try to stick to 1 article/day). The questions I've said I'll be attempting to answer might have additions/deletions/modifications over the course of time depending on the response they receive.

About me: I'm currently working as a Research Intern at Harvard University's Visual Computing Group. I was previously the AI Lead at Pixxel, where I now work part time (and on and off) as a researcher due to my other commitments. About a year into my AI journey (starting the summer after my first year in college) , I became a FastAI International Fellow.
In college (BITS Pilani), I was originally an MSc. Mathematics + B.E. EEE student, but I dropped my EEE to focus full time on AI.