

Microsoft: DAT210x Programming with Python for Data Science

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Video

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Machine Learning Possibilities



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Machine learning is a field that is actively being developed. As a programmer, you too can take part in that development. The traditional route of doing this starts by brushing up on all those mathematics and statistics courses you took in university, and maybe even going back to get a PhD. There are also many free online lectures you could benefit from, a few of which we've linked to in the Dive Deeper section. You could even try implementing a few of the simpler algorithms from scratch, such as K-Nearest Neighbors.

That said, the purpose of this course isn't to get you programming machine learning algorithms. Rather, it is only intended to introduce you to their *usage*, and get you comfortable with their application. Data analysis is a lot deeper than just machine learning, however machine learning is an excellent and necessary tool for doing analysis.

Machine learning gets better by the day. Sometimes due to novel approaches being formulated, but usually due to our ability to process more data. Recently, Google open-sourced their flagship, deep-learning, neural-network library called TensorFlow. This is the software package in change of processing your third grade picture and telling you "pale child in shorts hugging a balloon". It's the algorithm Google uses to translate text back and forth between Arabic and Zulu. TensorFlow was responsible for beating Lee Sedol, the 9th-dan, world Go champion. And of course, TensorFlow is a critical part of Google's bread-and-butter search pipeline. Google open sourced this tool without much fear because it's really the data and not the algorithm that drives their killer insights. With enough good data—and we all know Google knows us better than our parents, siblings, and even spouses—it is simply amazing what you can get a computer to do.

Given good data, there are a few targeted areas where machine learning really shines. If you can engineer your data driven questions into one or more of these identified areas, you can take full advantage of all machine learning has to offer using out-of-the box algorithms. Take a look at this non-exhaustive list of sample areas, and try to find a pattern you can reformulate your ideas to conform to.

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