Hello, and welcome to the Coursera specialization in Machine Learning in Finance!

My name is Igor Halperin, I am a Research Professor at NYU Tandon School of Engineering, and I will be your instructor for this specialization.
I will say more about myself in a bit, but first I want to talk about what you will get out of this Specialization.

First, about the Specialization itself.

Put simply, this is a specialization in Machine Learning that focuses exclusively on applications of Machine Learning in Finance. This is different from other courses that typically use a wide range of industrial applications to teach Machine Learning.

The second very important point about this Specialization is about its intended audience.

I assume that you are either a financial professional, or plan to become a financial professional in a near future.
Therefore, this Specialization is designed for practitioners or future practitioners, who either work or plan to work in Finance, and want to learn Machine Learning from scratch, but using problems from Finance to develop your skills.

Indeed, Finance is all about numbers and predictions, so why don't we use financial data from the start to learn Machine Learning, rather than use examples that have little to do with financial data?

The third remark I would like to make is about examples and assignments in this Specialization.
Because this is a Specialization for practitioners, I did my best to avoid meaningless exercises that have nothing to do with the real life.
For example, we will NOT be doing such things as predictions of stock prices, or predictions of stock indexes, for this sake.

The reason is that, even though you may have come across many blogs or research papers that discuss applications of Machine Learning to such problems, they have no PRACTICAL interest.
Therefore, in order to maximize its usefulness for you, we will only be looking in this Specialization at practically useful examples.

So, what will be you take-aways from this Specialization?

First, you will get a good understanding of both core concepts and most important algorithms of Machine Learning, from scratch.

Second, you will learn all this not in the abstract, but rather in a very hands-on way.

We will put our hands on a lot of different kinds on financial data, and use multiple Machine Learning algorithms to play with the same data.

You will learn not only about classical Machine Learning algorithms, but also get a solid understanding and practical experience of working with neural network, including in particular the so-called Deep Neural Networks that have recently took the industry by storm.

As a result, you will develop a good intuition about both financial data, and about how different algorithms perform on these data.

You will know how to apply Python Machine Learning packages such as scikit-learn or TensorFlow to built Machine Learning models for applications in Quantitative Trading, Asset Management, Banking and other fields of Finance.

You would be able to impress your potential employers with a portfolio of interesting and relevant projects on applications of Machine Learning to problems of PRACTICAL interest.

More importantly, you will be able to use your knowledge to build new Machine Learning models, using the libraries you learned, if your business need them.

And this last thing I mentioned brings me to the last but not least part of your take-away from this Specialization.
Machine Learning is an extremely active field.
Methods that are taught at schools as a cutting edge today will become outdated tomorrow.

Therefore, it is important that industrial practitioners in Machine Learning should be able to understand, as practitioners, papers in Machine Learning, and would be able to implement them.

And the best way to learn to read papers on Machine Learning is to actually read them!

Therefore, our programming assignments will often have references to original publications that can be used to dig deeper into the topics we will be covering.

In addition, I will be providing references to original publications in weekly reading lists, which should both help you to get a broader view of the topics to be covered, and develop some practice in reading Machine Learning papers.

So, these would be your three main take-aways after completing this Specialization in Machine Learning in Finance. In the next video we will talk more about the structure of this Specialization.