

# MLI Alumni Stories



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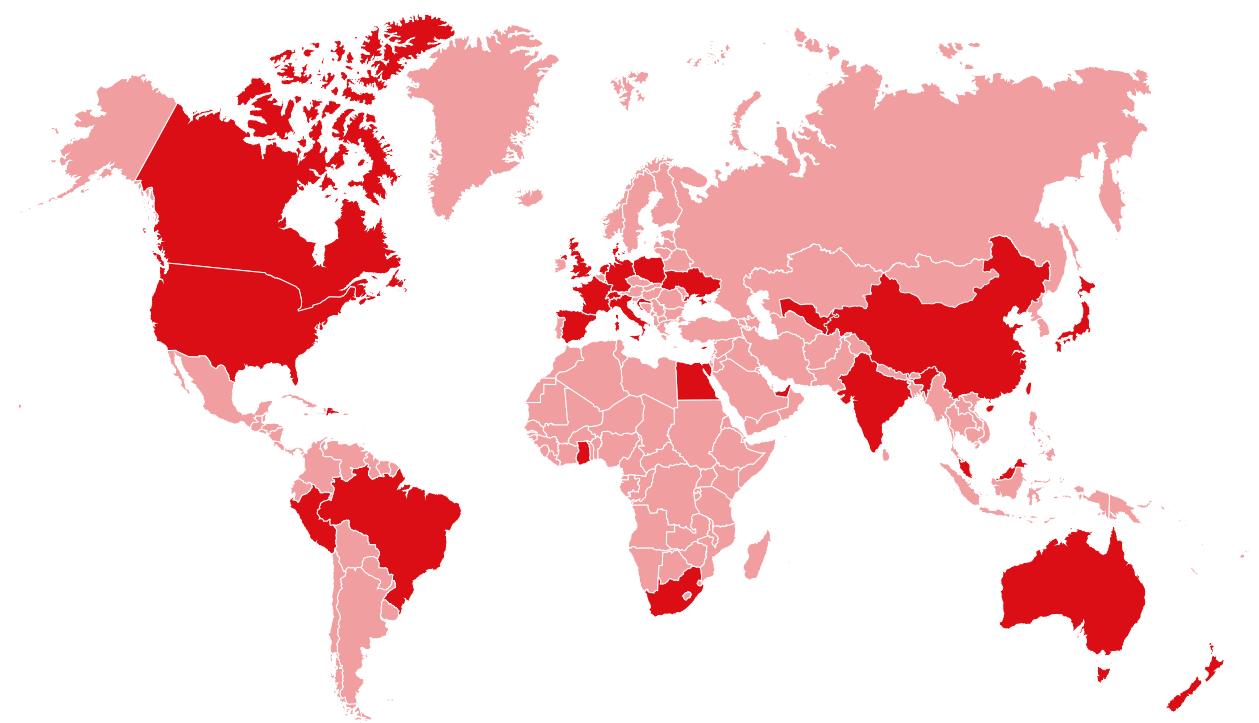
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# MLI Alumni Stories

The MLI is practitioner led, developed and orientated, and enables students to acquire an advanced-level understanding on the key modelling processes of machine learning in quantitative finance. Practitioners will be able to apply best-practice techniques directly at their employing institutions. This course has been designed to empower individuals who work in or are seeking a career in machine learning in finance.

## A Global Community

The MLI is a truly global qualification, educating throughout the world in over 40 countries.



Over 500 alumni have now chosen  
the MLI career-enhancing professional qualification

# Industries

MLI students have come from around the world and from across the banking, consulting and financial software industries, including:

- Abu Dhabi Investment Authority
- Adenza
- AXA Investment Managers
- Banco Caribe
- Banco de Credito del Peru
- Bank for International Settlements
- Bank of America
- BIS
- BNP Paribas
- CIBC
- Citigroup
- Credicorp Capital
- Credit Suisse
- Deloitte
- EBRD
- EIB
- Emirates NBD Bank
- Ernst & Young
- IHS Markit
- Intel Corporation
- J.P. Morgan
- Lloyds Banking Group
- Mitsubishi UFJ Morgan Stanley Securities Co., Ltd
- Nordea
- Prometeia
- RWE Supply & Trading GmbH
- Schroders
- Siemens AG
- Standard Chartered Bank
- Swiss National Bank
- True North Partners
- UniCredit Bank AG
- Van Lanschot Kempen
- Wipro
- Zürcher Kantonalbank

## Positions held by MLI alumni

Obtaining the MLI is a solid demonstration of continuing professional advancement and one that will keep both you and your employer ahead of the competition. We are confident of the high quality and practical value of the MLI. It is a privilege to be able to bring this programme to so many.

- CEO
- CFO
- Chef Risk Officer
- Chief Investment Officer
- Data Engineer
- Data Scientist
- Equity Derivatives Analyst
- Equity Derivatives Trader
- Head of Fixed Income
- Head of Fixed Income Trading
- Head of Internal Models
- Head of Model Risk Management
- Head of Quantitative Analytics
- Head of Quantitative Research
- Junior Quantitative Analyst
- Quantitative Analyst
- Quantitative Analyst and Developer
- Quantitative Developer
- Quantitative Investment Analyst
- Quantitative Researcher
- Risk Manager
- Risk Modelling
- Senior Quantitative Analyst
- Senior Quantitative Developer
- Senior Risk Engineer
- Senior Risk Modelling

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## MLI Alumnus Florian Gruenewald

March 23, 2023

I have a masters in quantitative finance from ETH and University of Zurich and did an undergraduate degree in math before that. After my studies, I started working in finance as a risk manager at a large Swiss bank and then switched to an asset manager to do equity research and trading. Currently I'm in risk management and strategic asset allocation at a large German pension fund, which is a very diverse job when it comes to my responsibilities in the business.

About a year ago, I made a decision to take further education and could see that the field of machine learning and artificial intelligence interested me personally. It had not been a central part of my studies at university, so for my continued education, it felt like a natural fit, as I like to do coding in my daily life, implementing models and mathematics. So, I looked around for a course that was structured in a professional way.

*Certainly, you can do machine learning and AI education using popular online platforms, but what ultimately keeps you engaged is if you have good instructors, weekly lectures, homework, and, in the end, you will receive a certificate, something you can show to your employer or discuss in job interviews.*

I learned about the MLI and felt it was a great opportunity to pursue my interest in this direction.

I found the program to be very concise and taught by experts in each area. What I enjoyed most were the supervised, unsupervised, and deep learning lectures, when we talked about the models that can be used for different implementations in finance, including examples from trading and risk management. I also enjoyed developing my understanding of neural networks because this is one of the models that you hear about it all the time and although you may grasp the ideas, it is challenging to fully understand and implement something like that.

*Finally, I'd make note of the natural language processing lectures towards the end of the course. These days, everybody is talking about Chat GPT and it's certainly one of the most interesting and exciting fields.*

It's also among the most relevant areas in my work currently because we're trying to find ways to implement NLP models to summarize large research documents and market reports, using them as a Q&A chat. This could speed up many things that we are doing such as preparing briefings for management on market movements and risk themes, all done manually at the moment. We also have an in-house asset manager who's interested in supervised, unsupervised, and neural network models and how you can enhance fundamental research or investment strategies with those kinds of models.

For those considering or enrolled in the MLI program, I would strongly recommend keeping up with the material over the duration of the course. With lectures every week, it is better to maintain your pace as you go than to wait until the end and try to catch up with all



of the recordings just before the exam. It is also best to work on applying the theory and practical techniques you have learned right away through the coding examples that are provided during the course. If you focus on these exercises, then implementing the final project will be easier because you have become familiar with the specific techniques along the way.

In addition, I would recommend brushing up on your Python coding skills in advance. If you can invest more time a little earlier, hopefully things will build upon themselves.

*The course is structured very well and the learning accumulates in a practical way. I am continuing to focus on the potential for machine learning, moving further into this field to develop applications in my area.*

Once you have completed the MLI program, it is important to apply the knowledge regularly; stay current and keep what you have learned fresh in your mind.



## MLI Alumnus Muhammad Amjad

March 28, 2023

When I signed up for the MLI, I had been working for 11 years in the actuarial space and head a team working on internal models within an insurer in the London. My educational background was fairly quantitative, as I had an undergraduate degree in economics and actuarial

science, passed the actuarial professional exams. I had also done some coding and wrote a number of applications in the past and was trying to find a new skill to develop each year. In 2019, I studied quantum computing and in 2020, I focused on innovation and systems thinking. Then I decided to do something in computer science or machine learning and even considered an MSc in computer science. However, that would have been a major commitment and I did not want to take time away from work.

I had also been receiving newsletters from WBS and when they sent me an MLI brochure, I decided right away that this was the right choice. There has been a lot of movement in machine learning and this was an opportunity to take a deep dive and also develop my contacts in the industry.

*I found the program to be very good. I enjoyed going to the Canary Wharf office and interacting with the lecturers and also having the option to see the lectures online, as many delegates did from around the world.*

The Python primer was more than enough to get me going. Prior to that, I had used MATLAB and Visual Basic and there was a fair amount of similarity between MATLAB and Python in terms of the way code is vectorized in order to make calculations efficient. I had also done quite a bit of reading in previous years on neural nets and I was familiar with classification techniques, but this gave me a chance to put these ideas into practice.

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*One particularly good aspect of the program was reinforcement learning because it is a different way of thinking about a problem and you need to master several areas before you can make significant progress.*

Obviously, there are many packages available to download and get started, but you should have a solid understanding the problem you're trying to solve. With reinforcement learning, if you're training an agent to play a game, you need to know how the game works, what the rules are, and what the reward functions will be before you can effectively construct it for the agent. Machine learning works best if you already have some expertise on how to approach the problem and then you can be somewhat creative.

Looking ahead, I am finding opportunities to move deeper into machine learning through both work projects and side projects. There are some open challenges on topics like climate change, where you could use quantum machine learning to solve a given problem, like the modeling of chemical bonds, which can help us understand more about carbon capture, for example, as well as many interesting problems in finance.

On the depth of the learning in the MLI program, I'd note that each topic could be a six-month program in its own right. Thinking about reinforcement learning, deep learning, quantum machine learning, and generative modeling, things like Chat GPT – these are big areas, and you could spend a great deal of time in any of

them. However, in the MLI course, you have to keep pace with the program and that means saving some of the content for future study. They do a great job of providing enough information to keep you progressing through the topics in an interesting and yet efficient way.

*It is meant to be a survey of all the different techniques in machine learning for finance and along the way, as you are attending the lectures, doing the reading, and competing the exercises, you will find some areas that you may want to specialize in.*

But for the near term, it's most helpful to master things like working with Jupiter notebooks and learning about the libraries, studying Qiskit or Pytorch, which all have their own data structures and methods.

One of the most important things is to be methodical about what you are trying to implement. When I would spin up a new workbook, I would first break down the task into a series of different subtasks and try to implement these without looking at the Jupyter notebook accompanying the lecture. This forced me to learn some of the methods and the functionality available within the libraries being used.

After some practice using any library becomes second nature. Once you have done that, there are great materials you can explore more deeply once you have completed the program.

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## MLI Alumnus Diana Enes

March 10, 2023

I studied for a bachelor's degree in mathematics at the University do Porto, where they have pure and applied math programs. Then I took a job in banking and also completed a masters degree in financial mathematics at Universidade Técnica de Lisboa in Portugal. Now I'm working at a large public institution. I've worked on several different teams throughout my career, from trading and front office, mainly on the pricing of derivatives, to modeling and validation. These days, I'm on a team that is responsible for various types of analytics on derivatives and XVAs.

This is what led me to the MLI program – in this field, if you look at the largest conferences around the world that cover cutting edge topics, they have shifted towards data science dramatically. Every year there has been an increase in the number of talks about machine learning algorithms and their application.

So, I was curious and looked into Coursera because everyone said it was a great introduction to the core subjects. I tested the water and really liked the combination of programming, models, mathematics, and optimization. I decided to continue with a more structured program and considered taking another masters degree, but that can be very heavy if you are working full time.

Then I came across the WBS offerings and found the Machine Learning Institute.

*I liked the length of the MLI program and could see that the syllabus covered many topics from supervised learning and neural networks all the way to quantum computing at the end of the program. The faculty members were very impressive in their fields; people I had heard of and knew from the industry. So, I enrolled.*

The classes in supervised learning were useful because I was already familiar with some of the methods and others were new to me. Then we went on to neural networks and dimension reduction techniques. I have been focusing on risk calculations over the last years, and I knew that things like principal component analysis have been around for a long time, but it was very interesting to learn about Autoencoders, for example.

There I discovered several techniques that I would like to implement in my work later this year. We also covered natural language processing and time series analysis; both are very useful in dealing with financial markets.

*The MLI program was a very thorough and complete education. The quality of the faculty is outstanding and program staff were very helpful and engaging.*

The hybrid online format is convenient and overall, the MLI certificate strikes a good balance between what they provide in the basic course and what you have access to if you have time to go deeper and take as much out of it as you can.

The key thing for program participants is to commit fully and go through it all the way to the end. There is an overwhelming amount of information and for people who have not done much mathematics in recent years, it would be good to refresh your mathematical knowledge ahead of time. I'd also recommend completing the exercises because that helps to develop your in-depth understanding of the models. This is one of the main goals of the program and they do it well.

*After you finish the certificate, you will be well-equipped to go out and work on whatever you have enjoyed the most in machine learning as you continue your career. I definitely recommend it.*





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