

Geometric Progression

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Artificial Intelligence & Machine Learning : A Plain English Guide for Everyone

Overview

"Artificial intelligence will shape our future more powerfully than any other innovation this century. Anyone who does not understand it will soon find themselves feeling left behind, waking up in a world full of technology that feels more and more like magic." Source: Vishal Maini & Samer Sabri.

If you don't know how "AI" works and what it can do, how can you plan for it? This course is orientated for anyone who don't know exactly what artificial intelligence is and wants a detailed overview of AI from scratch (without any math) so that they can plan for it and implement it going forward.

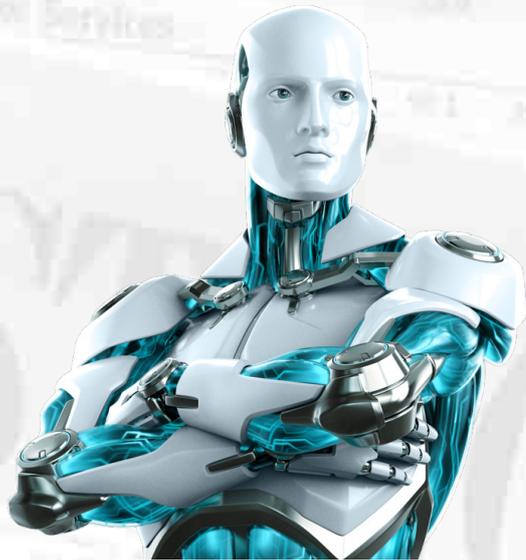
In everyday life, it's increasingly commonplace to discover machines in roles traditionally occupied by humans. Notwithstanding the advances from companies like Google, Facebook, Amazon, NVIDIA, Microsoft and Apple, AI has reached a point where even small companies can benefit from implementing it.

Mark will explore the concept of "AI" and machine learning in a non-technical manner means using humorous analogies, examples, pictures and videos. In particular he will give you the background as to why it has only taken off over the last few years and he will go into the details of Artificial intelligence, Machine Learning & Deep learning.

The core topics include:

- The brief history of artificial intelligence and why it has recently exploded.
- The hardware and software that make AI much easier to implement today.
- AI jargon from ANI to AGI and the AI singularity.
- Artificial intelligence vs Machine Learning vs Deep Learning vs Data Mining.
- Supervised vs Unsupervised vs Reinforcement Learning.
- Linear regressions that everyone can understand.
- Classification with logistic regression and support vector machines (SVMs) Projects.
- K-nearest neighbors, decision trees and random forests.
- Clustering and dimensionality reduction.
- Neural Networks
- Reinforcement learning.
- Implementing AI yourself.
- The risks of AI - Is this truly going to be the end of the world as we know it?
- Ethics of AI
- Implications of AI for the financial services industry, Government and industry in general.

In the spirit of AI, delegates who attend this course will receive all notes electronically as well as a hard copy. This includes the slides, videos and many links to excellent further reading.



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Duration: 1 day

Prerequisites: None.

Suitable for:

- Everyone!
- Ideal for professionals, managers and graduates who don't know anything about Artificial intelligence and want to get a head start.
- Anyone who believes (or doesn't believe) that their job will be taken over by a computer and wants to do something about it!

Tutor: Mark Raffaelli CFA,FRM

Mark is a practising CFA Charterholder and fellow member of the Global Association of Risk Professionals (FRM). Mark's extensive experience includes:

- Trading in Spot & Derivative Products professionally.
- Fund & Bank consulting regarding valuations, curves, Var, surveillance automation for Mifid II and local legislation etc.
- Development of quantitative financial models for surveillance, performance attribution, price validation, price models, risk (in particular Var) and automation.
- Developments of Apps for the investment and insurance industry.
- Mark programs in: Python, Javascript (including Angular and Ionic), Php, Excel VBA and ".net".



Those who have attended Mark's courses will know about his passion and ability to cut through jargon, simplify technical issues and provide real life examples.

What makes Geometric Progression different from other providers:

- We don't regurgitate traditional textbooks; instead we share real life experiences.
- We explain all the products as they relate to your own lives in plain English.
- We practice what we preach i.e. We are an authorised Financial Services Provider (License no:43244).
- We love multimedia and include video and film in all our courses.
- We are one of the few providers that offer advanced courses relating to the financial markets, modelling and implementation.

Comments from this Course:

- *"Exceptional and comprehensive overview especially considering the time frame of a 1 day session."*
- *"I found the course easy to follow and you don't need to be a techy. The volume of the material shared was huge so at the end of the day I was pretty tired trying to absorb all the information. However, everything was quite valid, insightful and useful."*
- *"Thanks Mark - Great Course. You have scared me into action."*
- *"Awesome Mark. You will see me at your machine learning workshops."*

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Agenda

1. The stuff you need to know before we start

- The brief history of artificial intelligence.
- Why the recent explosion in AI?
- AI in practice.
- The hardware and software that makes AI possible.
 - GPU vs CPU
 - Open source
 - Cloud processing
- AI jargon from ANI to AGI.
- The AI singularity.
- Artificial intelligence vs Machine Learning vs Deep Learning vs Data Mining.

2. Supervised Learning & Unsupervised Learning

- Linear regression.
- Over-fitting vs under-fitting.
- Regularisation.
- Hyperparameters and cross validation.
- Logistic regression.
- Support vector machines.
- K nearest neighbours.
- Can't see the wood for the "decision tree"? Try a random forest.
- K- means clustering.
- Hierarchical clustering.
- Dimensionality reduction with Principal component analysis (PCA) and Singular value decomposition (SVD).

Mark will use many pictures and humorous analogies to explain all of the above in plain English without delving into any detailed math. Mark will also offer examples of how each of the methods (and variations thereof) are used in practice.

3. Neural Networks and deep learning

- Getting to grips with neural networks & Deep learning.
- Layers of abstraction and Nodes.
- Convolutional neural networks
- Recurrent neural networks

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4. Reinforcement Learning

- Understanding how reinforcement learning works.

Mark will use many pictures and humorous analogies to explain all of the above in plain English without delving into any detailed math. Mark will also offer examples of how each of the methods (and variations thereof) are used in practice.

5. Implementing AI yourself.

- The environment you need to set up.
- Some key open source projects including: Scikit-learn, TensorFlow, Microsoft Azure Learning Studio, Keras, Pytorch etc.

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6. Risks and Ethics of AI:

- What are people saying about AI?
- Risks of AI: Where and how can it all go wrong.
- Ethics of AI.

8. Implications of AI on:

- The implications of AI for:
 - Financial services firms.
 - Traditional industry and retail.
 - Regulators.
 - Governments.

Mark will look at the potential business opportunities and threats for the above organisations.

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Some clients who have attended our Public Training



Email: mark@gpifm.com
 Web: www.gpifm.com
 Tel: 021 794 8332

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Terms and Conditions

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Geometric Progression reserves the right to change or cancel any part of the training courses due to unforeseen circumstances.

Cancellations:

If you cancel more than 14 working days before the course date, there is no cancellation fee. If you cancel between 2 and 14 days before the course date, a cancellation fee of 50% will be charged. Any cancellation less than 2 days before the course date will result in the full fee being charged i.e no refund. NO REFUNDS FOR "NO SHOWS".

Substitutions:

Registered delegates may be substituted at any time prior to the seminar **without** incurring any additional fee. Please inform Geometric Progression of the change.

Payments:

Payments must be made prior to the running of the event unless otherwise agreed with Geometric Progression.

Confirmation:

All registrations will be deemed confirmed and subject to these Terms and Conditions.

Geometric Progression reserves the right to cancel the course. Registered delegates will be notified and a full refund will be made.