

# Machine Learning in Financial Markets: Pitfalls & Solutions

Hi, I'm Serena! A bit about me...



**Senior Data Scientist at Delphia**



**Head of Operations at AI Socratic Circles**



**B.Sc., Mathematics & Biology  
McGill University**



**M.Sc., Mathematics  
Hong Kong University of Science  
and Technology**




**Soccer player**





**Cyclist**




Areas I've worked in...

 **Math & Biology**

 **Finance**

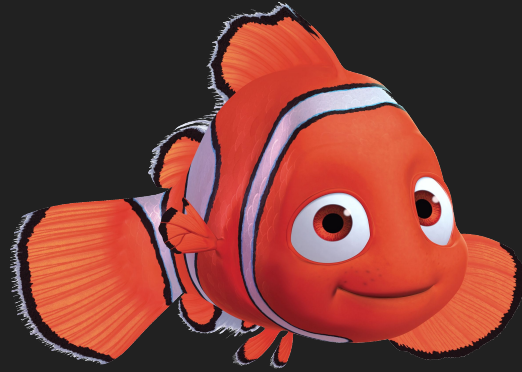
 **Oceanography & Fluid Dynamics**

 **Recommender Systems**

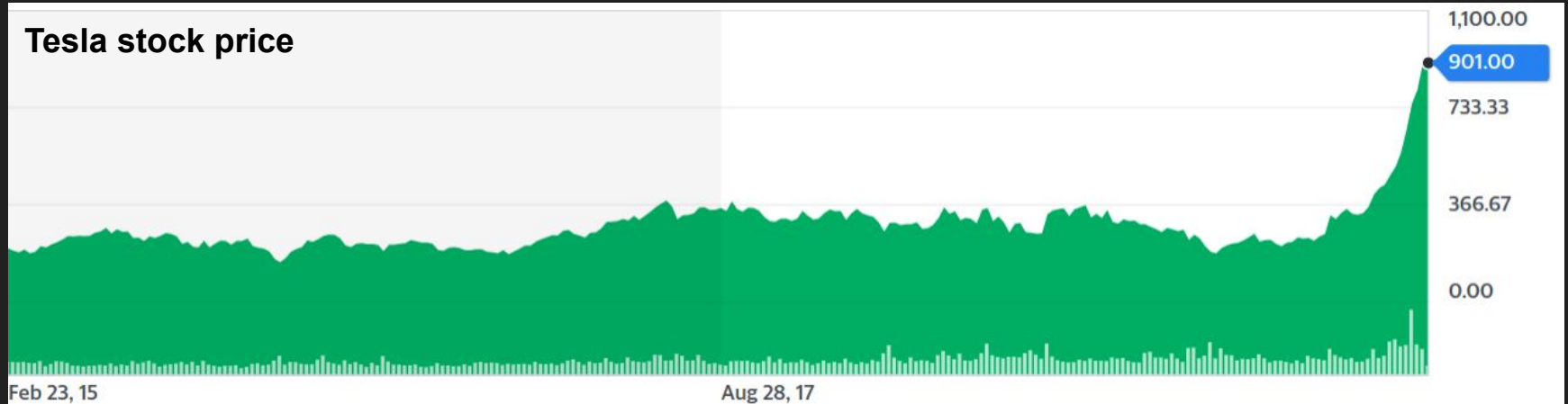


Domain knowledge is important!

# 1. The past does not equal the future



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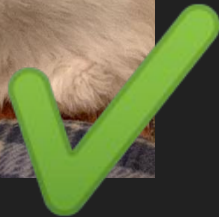
**Linear** model

**Simulate** data

**Don't take things so seriously**

(a good motto for life in general!)

## 2. Perfect accuracy is not enough





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**Trading Strategy**

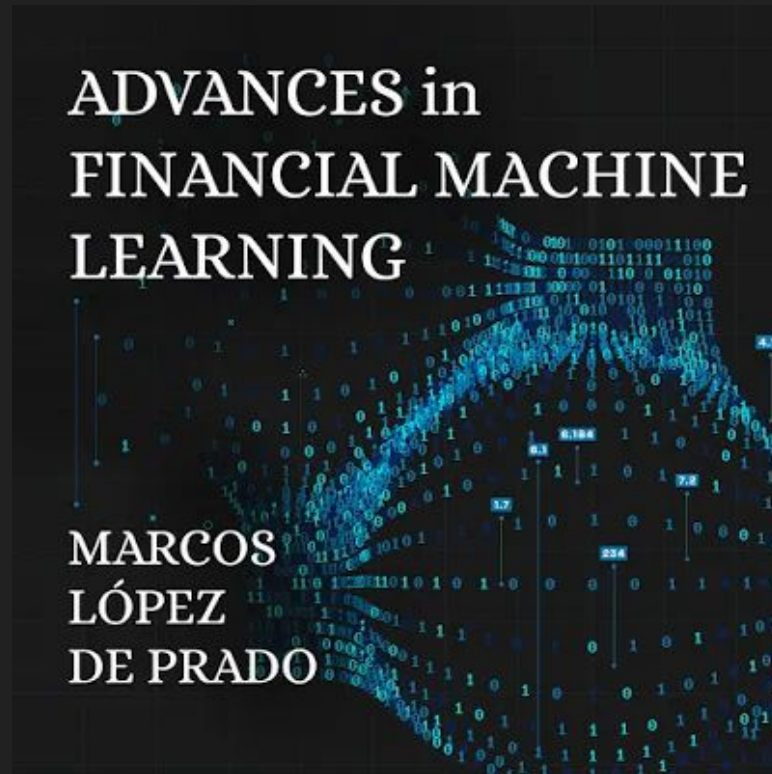


**Signal Model:**  
machine learning

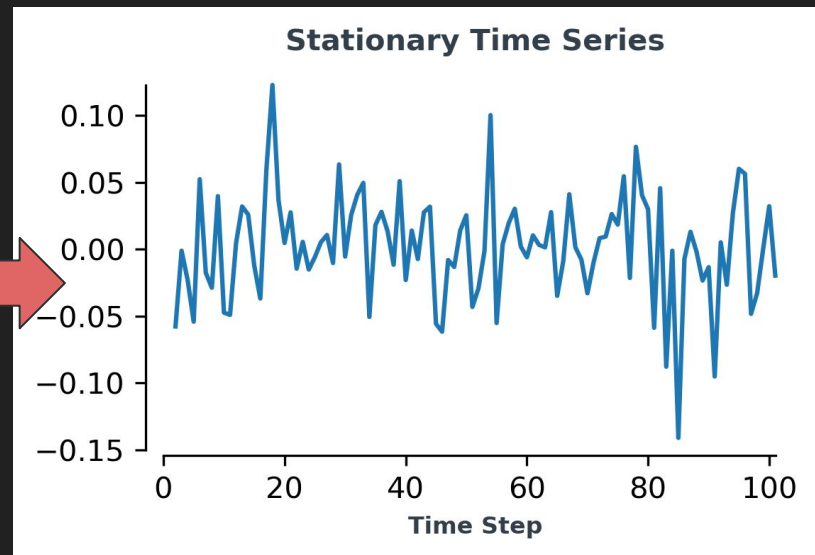
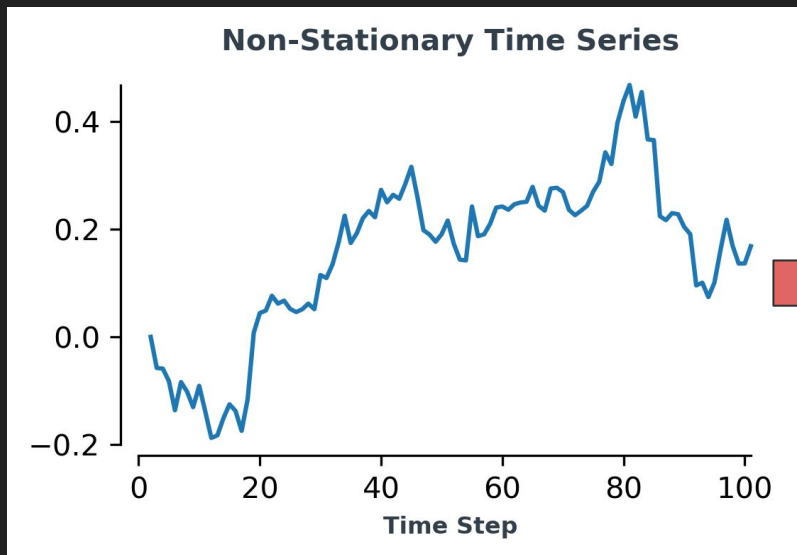


**Strategy Model:**  
portfolio and trading parameters

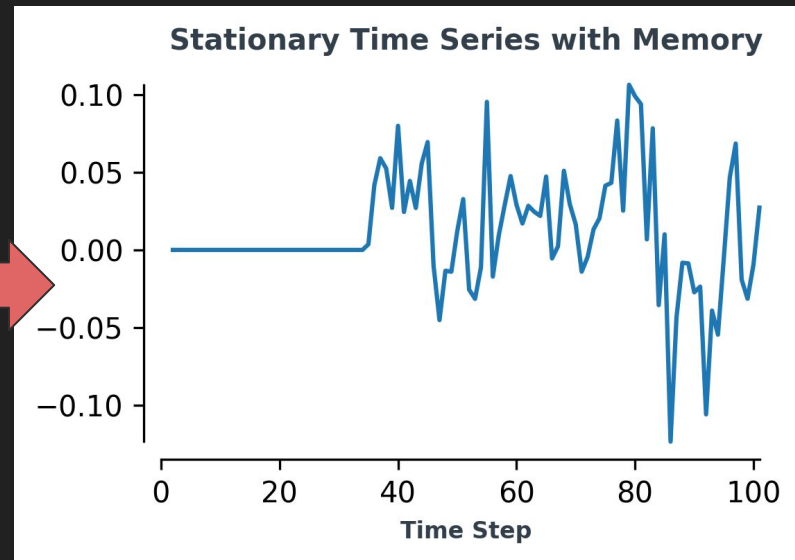
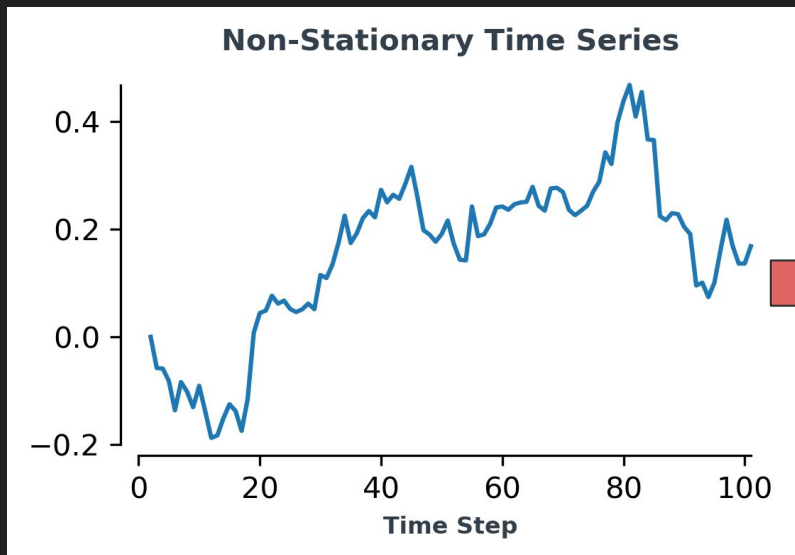
### 3. Memory is important



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In summary, when applying machine learning to financial markets, remember:



**The past does not equal the future**



**Perfect accuracy is not enough**



**Stationarity vs memory is a trade off**

Thank you for listening!  
Any questions?

# Credit for images & code

Nemo: [pixar.fandom.com](https://pixar.fandom.com)

Tesla stock: Yahoo Finance

AiFML picture: Google Play store

Thank you:

<https://jtsulliv.github.io/stock-movement/>

And thank you:

<https://github.com/philipperemy/fractional-differentiation-time-series/blob/master/fracdiff/fracdiff.py>