[Elements of Economics, Finance, and Computational Mathematics]

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Abstract

We examine an emerging pedagogical realm in which the importance of three major disciplines are considered in synchronicity. The aim is to understand the coherence of an interdisciplinary science formed around modern Economics, Finance, and Computational Mathematics. We recognize the rapidly evolving progress in data encoding techniques and contemplate economic, financial, and societal phenomena that may arise from technology evolving at increasing rates.

Contents

1 Introduction

I am developing this paper on my own in the hopes it becomes a larger group project. I believe all learning is a collective matter and cordially invite all people interested into the discussion of such a portfolio of ideas.

2 Recent computational developments

2.1 Zero Knowledge Proofs

Zero Knowledge proofs [12] are a familiar cryptographic concept with recent applicability to scaling financial circuitries [23].

2.2 Machine learning in numerical methods

Machine learning methods allow for greater accuracy in all manner of numerical computation and model interpretation tasks. Interpretability of models allows for easier and more accurate volatility modelling [5] [26] [33].

2.3 Artificial General Intelligence (AGI)

2.3.1 OpenAI

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3.1 Environment Intractability

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5 Blockchain security and pipeline transparency

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The role of *hype* in parsimonious production and consistent sales.

6.2 Herding

Huang et. al. [18] have described an irrational herd behaviour in financial markets for over two decades. Many studies have arose from studying seeming arbitrary volatility and correlations in equity markets. With LLMs largely available, one might be able to construct various algorithmic trading strategies based on the herding of volatile assets [32].

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