BIG DATA & ALGORITHMIC FINANCE

Louis BERTUCCI

Researcher, Institut Louis Bachelier

Louis Bertucci is a researcher at Institut Louis Bachelier (Paris, France). He received a PhD in financial economics from the University of Paris-Dauphine in 2019. Since 2017, his work has been almost entirely focused on the fundamental analysis of blockchain protocols. His interests are in consensus protocols, decentralized payment networks, decentralized finance and other related topics. At Institut Louis Bachelier, he is the scientific coordinator of the Finance and Insurance Reloaded Program (FaIR). He has also been teaching Blockchain Economics at Dauphine since 2020.

AGENTS' BEHAVIOR AND INTEREST RATE MODEL OPTIMIZATION IN DEFI LENDING
Louis BERTUCCI, Charles BERTUCCI, and Olivier GUEANT.

In the past five years, Decentralized Finance (DeFi) lending has seen rapid growth, leading to a substantial market with dozens of billions of USD in various cryptocurrencies currently borrowed as of the start of 2024. Contrasting sharply with traditional money, bond and bond futures markets, where interest rates emerge organically from participant interactions, DeFi lending platforms employ rule-based interest rates that are algorithmically set. Thus, the selection of an effective interest rate model is paramount for the success of a lending protocol. This paper delves into the modeling of agents' behaviors on lending platforms, proposing a theoretical framework for formulating optimal interest rate models. Furthermore, we examine streamlined interest rate models, assessing their characteristics and practical implications.

Download the paper