



A Deep History of Quantitative Finance

Prof Mesias Alfeus (Stellenbosch University)

Monday, 3 August 2026 | 16h00–17h00 SAST

HOW TO ATTEND:

In person (main venue):

- Road House Cinema
(Neelsie)
Stellenbosch University

Watch at satellite venues:

- Room P215, 2nd Floor
Physics Building
University of the Witwatersrand
- Seminar Room K310
Physics Building G5
North-West University

Online (live stream)

--- Please note, a recording of the lecture will be published on the NITheCS YouTube channel following the event ---

ABSTRACT

This talk traces the evolution of quantitative finance from its earliest roots to today's machine learning frontier. Beginning with ancient option-like contracts and Louis Bachelier's overlooked 1900 thesis on Brownian motion, the narrative moves through Markowitz's Modern Portfolio Theory, Sharpe's CAPM, and Fama's Efficient Market Hypothesis, before arriving at the Black-Scholes revolution that reshaped derivatives markets. It examines the rise of quantitative hedge funds – Renaissance Technologies, D.E. Shaw, and LTCM – alongside the crises that exposed the limits of financial models, from Black Monday and the LTCM collapse to the 2008 Global Financial Crisis and the 2010 Flash Crash.

The talk covers algorithmic and high-frequency trading, the post-LIBOR benchmark rate transition, the explosive growth of OTE options, factor investing and smart beta, and the rise of machine learning and alternative data in modern quant strategy—closing with a look at fine wine as an emerging quantitative asset class. Throughout, the story affirms one theme: quantitative finance has always been about pricing uncertainty.

BIOGRAPHY

Prof Mesias Alfeus is an Associate Professor of Financial Risk Management in the Department of Statistics and Actuarial Science at Stellenbosch University, and holds a PhD from the University of Technology Sydney.

He serves as Lead Principal Investigator of the NITheCS Quantitative Finance Focus Area and as Editor-in-Chief Mentee at the *South African Journal of Science*. He also sits on the Editorial Board of the *Journal of Futures Markets* and is an Associate Editor of the *International Journal of Theoretical and Applied Finance*. His research focuses on the development of numerical methods and analytical solutions for complex option derivatives, with an emphasis on rigorous model design and evaluation.

In addition to his academic roles, he contributes to industry practice as a Specialist Consultant to FirstRand Group's Market Risk Technical Committee, supporting robust risk governance and model oversight.



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