

StormCollins | Curriculum Vitae

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Work Experience

Consulting & Audit

Deloitte, Financial Services Advisory, Valuations, Senior Manager (May 2019 - Present)

- BAU management of junior staff members, help drive team strategy, as well as facilitating business proposals to bring in new engagements,
- Managed client relationships with regards to delivery, reporting, & interpretation of derivative pricing, & risk results, strategy for the team, proposals for new business,
- Derivative pricing in both IFRS 2 & IFRS 13 standards, wide spectrum of instruments from employee share schemes, BEE options, to CVA, DVA, FVA, & KVA,
- Instrumental in spearheading a revamp of their existing limited C# library for derivative pricing as well as educating junior members,

Investment Banking

Standard Bank CIB, Trading Risk Analytics, (April 2014 - May 2019)

- Spearheaded & coordinated the incipient stages of development for a counterparty credit risk framework, in C#, for performing PFE & EPE calculations. This included designing, implementing, & delegating the various classes for market data from curves to vol surfaces, as well as the pricing & deal architecture which would consume stochastically evolved underlying data,
- Fielded wrong way risk queries from credit managers, sales, & trading with regards to the exposure generated by the standard as well as conditional default model,
- Involved with vetting the consistency of exposures & methodology in numerous trading system migrations & drove the verification of the 2017 Adaptiv upgrade,
- Performed relevant analysis for how to best accommodate exotic type instruments that can only be approximately captured in Adaptiv,
- Performed bespoke PFE calculations for instruments not catered for by Adaptiv,
- Fielded queries from model validation with regards to reviews of stochastic processes & bespoke calculations used in Monte Carlo simulations,
- Ran analysis of back testing stochastic process parameters & models via a framework developed in Python & C#,
- Assisted with upgrading C# code for calibrating stochastic process parameters.
- Fielded queries with regards to collateral algorithm,

- Assisted Asset Control in implementing revised market data specifications required for Adaptive exposure calculations,

ABSA Capital, Independent Valuations & Model Control, (February 2012 - March 2014)

- Price & bid offer testing for equity derivative & prime services desks using observable/liquid market data, in particular independently built trader index & single stock vol surfaces, & independently pricing their exotics portfolio,
- Performed monthly CVA, CCRA, & FVA calculations attributing moves in counterparty credit & funding exposure,
- Reviewed new product approvals & structured trade reviews across asset classes to ascertain how valuations would have to accommodate them,
- Performed observability analysis of market data,
- Involved with resolving multi-curve pricing issues which would arise in the team,
- Gradually became more involved with pricing & curve bootstrapping for the credit desk,

ABSA Capital, Quantitative Analytics, (February 2010 - January 2012)

- Implemented/researched various pricing, hedging, & calibration methodologies for various asset classes (mainly credit & fixed income),
- Aided in implementation of multi-curve framework for FVA calculations & ensuring consistency in the construction of the money markets funding curve,
- Aided in development of standardised Excel pricing platform via C# by leveraging off the Barclays C++ library,
- Was highly involved in the then incipient area of xVA calculations, including looking at possible (now naive) hedging strategies,

Tertiary Education

Georgia Institute of Technology, Atlanta, Georgia

Masters of Science in Computer Science, *In Progress*,

- I was accepted into a part-time masters degree in computer science at a highly respected American university in 2019, which I intend to complete by 2022,
- The masters degree is entirely by coursework & I've elected to take the *computing systems* stream which is primarily focused on software development, operating systems, high performance computing etc. & to complement it with courses from the machine learning stream,

University of the Witwatersrand, Johannesburg

Masters of Science, Physics, 2008, *with distinction*

- Dissertation Topic: *Multi-Trace Operators and the Gauge-Gravity Correspondence*
- Supervisor: Professor Robert S. de Mello Koch

- Area of Study: String Theory (AdS/CFT Correspondence)

Bachelor of Science (Honours), Advanced Mathematics of Finance, 2009, *with distinction*

- Honours Project, *A Low-Dimensional LIBOR Market Model*

Bachelor of Science (Honours), Physics, 2007, *with distinction*

- Honours Project, *Quantum Statistics of Anyons*
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Publications

Restricted Schur Polynomials and Finite N Counting. Storm Collins, Physical Review **D 79**, 026002 (2009), <http://arxiv.org/pdf/0810.4217.pdf>

Exact Multi-Matrix Correlators. R. Bhattacharyya, S. Collins and R. de Mello Koch, Journal of High Energy Physics JHEP**03**(2008)044, <http://arxiv.org/pdf/0801.2061.pdf>

University Awards

- Standard Bank Award for Honours in Advanced Mathematics of Finance (2009),
 - CH Leon bursary (2009),
 - South African Institute of Physics (SAIP) award for best Masters talk in theoretical physics (2008),
 - Merck achievement award for best interdisciplinary third year BSc student (2006),
 - Diamond research laboratory award for top third year physics student (2006),
 - Frank Nabarro summer essay prize for Physics III (2006),
 - Diamond research laboratory award for top second year physics student (2005),
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Computer Skills

Programming Languages

- **Advanced:** C#, Matlab, Python (including Numpy & Scipy).
- **Intermediate:** C\C++
- **Basic:** Java, SQL

Software Development

- I've been involved with the scoping & design of two significant quantitative software projects, one at Deloitte & one at Standard Bank CIB,
 - Although not part of my original tertiary education I have supplemented my knowledge over the years in various pertinent areas including: Design patterns, continuous integration, version control, resource management, analysis & verification, & general software best practices, & have become adept in several coding eco-systems.
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