# StormCollins | Curriculum Vitae

**Contact Information**

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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)

- Developed a framework, in C#, for performing stress testing analysis of counterparty credit risk which integrated with Adaptiv to calculate relevant metrics such as PFE, EPE, & Economic Capital for various stressed economic scenarios.
- Fielded wrong way risk queries from credit managers with regards to the exposure generated by the conditional default model.
- Involved with vetting the consistency of exposures & methodology in numerous trading system migrations & Adaptiv upgrades.
- Performed relevant analysis for how to best accommodate exotic type instruments that can't be accurately 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 used in Monte Carlo simulations.
- Helped with the analysis & implementation 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 about collateral algorithm.
- Assisted Asset Control in implementing revised market data specifications required for Adaptiv 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,

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## 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*

**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),

**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.