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| Storm Collins  Quantitative analyst  +27 (0)66 273 3039  collins.storm@gmail.com |
| I have a passion for mathematical finance and related software development and have occupied several different quantitative roles over my 13-year career from front-office quantitative analytics through to back-office counterparty credit risk and now consulting. I am always keen on driving strategies to streamline and automate BAU processes freeing up valuable time and thereby allowing teams to better focus on core elements of their quantitative roles. I am also very passionate about upskilling and mentoring junior team members to become fully realized quants and often find myself volunteering learning sessions to them and the broader team. |

# Experience

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| May 2019 – PresentDeloitte, Financial services advisory At Deloitte I have occupied roles within both the FSA Valuations and FSA FinTech teams. Within both teams my focus was similar i.e., implementation of a derivative pricing and xVA library, primarily in C# and Python for clients and in-house use, as well providing subject matter expertise in derivative pricing and xVA and upskilling and managing junior team members. Key responsibilities included but not limited to:   * Exotic and vanilla derivative pricing in both an advisory and audit capacity for corporate and banking clients, * xVA: Calculating CVA, DVA, FVA, and limited involvement with KVA and MVA for corporate and banking clients, * Implementing and validating single and dual curve bootstrapping, as well as other core market data requirements such as model calibration, * IFRS 2 (Employee share scheme) American Monte Carlo valuations, * Managing incumbent software processes e.g., managing continuous integration and delivery and version control for certain projects, * Assisted with setting up an in-house market data database, with the end of goal being used in hedged effectiveness calculations, * Training of team members and the broader Financial Services Advisory in technologies such as C#, Python, Git, and general financial mathematics topics, * Limited involvement with driving proposals for new client business. |
| April 2014 – May 2019Standard Bank CIB, Trading risk analytics In Trading Risk Analytics, the primary focus was on counterparty credit risk with some limited exposure to market risk. In the team my responsibilities included:   * Driving and implementing a new Monte Carlo risk engine, in C#, to wean ourselves off our vendor system, and to ultimately have it be productionised for front office sales and trading teams. This included designing the architecture, upskilling and delegating tasks to team members to assist in the development of the relevant data structures and algorithms for market data, trades, and stochastic process used in the PFE simulations, * Implementing a counterparty credit risk (PFE – Potential Future Exposure) stress testing engine for economic crises, * Various automation strategies such as the development of tools and “bots” to expedite reporting and BAU tasks, * Dealt with bespoke PFE calculations of exotic instruments and fielded BAU queries from traders, sales and other teams regarding PFE and methodology, including matters arising from ECOD (exposure conditional on default), WWR (wrong way risk) and collateral, as well as liaising with the independent model validation team with regards to model reviews, * Heavily involved in periodic recalibration and impact assessment of key stochastic models using real world/historic prices, * Drove the 2017 adoption, via testing and methodology reviews of the FIS Adaptiv upgrade within counterparty credit risk,  February 2012 – March 2014Absa capital, Independent model control and Valuations  * Fortnightly price and bid off testing of derivatives and xVA, used for provisioning reserves against trading desk positions, including independently constructing single stock and index equity volatility surfaces, dividend yield curves etc. * Ran monthly CVA, DVA, and FVA numbers for deals not yet in the front office system, DTRE and helped facilitate their transition to that system, * Liaising with the Equity, CVA, and Prime Brokerage front office trading desks, * Reviewed new product approvals & structured trade reviews across asset classes to ascertain how valuations would accommodate them, * Beyond CVA/DVA, gradually became more involved with pricing and bootstrapping of survival curves for the credit desk.  February 2010 – February 2012Absa capital, QAD (quantitative analytics division) Within the QAD team I sat on the trading floor and worked closely with traders to address nuanced issues which were, back in 2010, being seen for the first time locally: dual-curve bootstrapping, OIS, FVA, funding curve construction for FVA, CVA and DVA etc.   * Assisted in developing the in-house software pricing library, *AQUA*, in C# which acted as an enhanced Excel add in for traders to price and manage their risk. I was primarily involved with credit and xVA aspects of the library. * Implemented a naïve hedging strategy for FVA highlighting its peculiar nature, * General BAU of pricing queries for exotic and vanilla derivatives. |
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# Education

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| 2020 - present (On hold)Master of Science (Computer Science), Georgia insitute of technologyThis is an intense distance-learning masters by coursework at an institute, which is ranked 5th in the USA for it’s computer science department. I have currently put it on hold due to work commitments but hope to resume it in the near future. I have completed 3 of the necessary 10 courses: Software Analysis and Testing, Computer Networks, Applied Cryptography2008Master of Science (theoretical Physics), University of the witwatersrand  * Area of study: String Theory (AdS/CFT Correspondence), * Dissertation topic, [Multi-Trace Operators and the Gauge-Gravity Correspondence](http://wiredspace.wits.ac.za/bitstream/handle/10539/7200/MSc_Dissertation_of_StormCollins%280408399D%29_2008.pdf?sequence=1) * With distinction, * SAIP (South African Institute of Physics) award for best Masters’ talk in theoretical physics, |
| 2009BAchelor of science (Honours) Advanced mathematics of finance, University of the witwatersrand  * Dissertation, *A Low-Dimensional LIBOR Market Model*, * Standard Bank award for Honours in Advanced Mathematics of Finance, * CH Leon Harris Bursary,  2007BAchelor of science (Honours) Physics, University of the witwatersrand  * Dissertation, *Quantum Statistics of Anyons*, * 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), |

# Publications

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| * ***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 JHEP03(2008)044, <http://arxiv.org/pdf/0801.2061.pdf> |  |

# Computer SKills

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| * ***Intermediate to advanced:*** C#, Python, Numpy, Scipy, LaTeX * ***Intermediate:*** Git, GitLab,Matlab * ***Basic:*** C, C++, SQL, Pandas, Linux, Quantlib |  |