

Stuart Gordon Reid

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OBJECTIVE To solve challenging theoretical and applied problems in the field of quantitative finance using computer science and advanced machine learning algorithms.

WORK EXPERIENCE *Quantitative Strategist & Partner* Sep 2015 - Present
NMRQL Quantitative Hedge Fund

- Developed numerous quantitative investment strategies. These strategies use machine learning algorithms, nonlinear optimization techniques, and large amounts of data to construct portfolios which generate abnormal returns.
- Developed a proprietary R package called recipes. Recipes allows users to simulate the performance of any quantitative investment strategy whilst taking into consideration risk budgets, constraints, gearing, trading costs, and more.
- Developed an algorithmic trading system which allowed quantitative investment strategies developed in R (using the recipes package) to be traded autonomously using Bloomberg for live data feeds and direct market access.

Quantitative Analyst Sep 2014 - Sep 2015
Old Mutual Balance Sheet Management

- Developed quantitative risk models of long-dated corporate liabilities for balance sheet reserving and hedging purposes using C#, and CUDA. These models used advanced multi-factor stochastic processes and Monte Carlo simulation.
- Worked on the Economic Value Management (EVM) framework which is used to determine optimal capital allocations to emerging markets business units.

Quantitative Analyst / Junior Consultant Jan 2013 - Sep 2014
KPMG South Africa

- Developed a number of pricing models for fixed income securities and FX derivatives on a client's Calypso trading and risk management system.
- Developed a VBA tool for performing multi-currency corporate debt optimization. The tool took into account interest rates, exchange rate risk, and taxes.
- Assisted with the programme assurance of a client's Finacle core banking system implementation. The streams I worked on included the IT architecture, solution design, data warehousing, security policies, and testing processes.
- Designed a new, compliant hedge accounting process for Forward Exchange Contracts for a large South Africa Utilities provider.

FORMAL EDUCATION *Master of Science, Computer Science* Jan 2015 - Present.
University of Pretoria, Computer Science Department
Research: *Exploratory Landscape Analysis of Portfolio Optimization Problems*

Bachelor of Science (Honours), Computer Science Jan 2013 - Jan 2015
University of Pretoria, Computer Science Department
Research: *Currency Carry Trade Portfolio Optimization using PSO*
Cumulative Weighted Average: 75% (GPA: 3.79)

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|-----------------------------|--|---------------------|
| | <i>Bachelor of Science, Information Technology</i> | Jan 2010 - Jan 2013 |
| | University of Pretoria, Computer Science Department | |
| | Extracurricular activities: ACM competitions, Google Code Jam, Residence Management Committee (RMC), and Students in Free Enterprise (SIFE) | |
| | Cumulative Weighted Average: 65% (GPA: 2.98) | |
| FORMAL CERTIFICATES | <i>Passed Regulatory Exams 1, 3, and 5,</i> | Aug 2016 |
| | Financial Services Board of South Africa (FSB). | |
| | <i>Passed Level I of the CFA Program,</i> | Jun 2015 |
| | Chartered Financial Analyst Institute (CFAI). | |
| CONFERENCE PAPERS | <i>Constraint Handling Methods for Portfolio Optimization using PSO</i> | Dec 2015 |
| | Computational Intelligence in Financial Engineering (CIFER) | |
| | <i>Currency Carry Trade Portfolio Optimization using PSO</i> | Jul 2014 |
| | IEEE World Congress for Evolutionary Computation | |
| TECHNICAL SKILLS | <i>Software Engineering and Programming</i> | 2010 - Present |
| | Fluent in Python, R, C++, C#, and Java development. Specialized in the development of accurate, robust, and efficient numerical or statistical data structures and algorithms for quantitative financial models (I like to measure code in μ s). | |
| | <i>Machine Learning Methods</i> | 2012 - Present |
| | Experienced with machine learning methods for performing regression, classification, or generation. Implemented models using various ML frameworks including Keras, H2O, Caret, Theano, Tensorflow, SciKit Learn, Encog, and CiLib. | |
| | <i>Financial Modelling</i> | 2013 - Present |
| | Comfortable with stochastic processes, non-linear optimization, and (most) statistics. Developed numerous derivatives pricing and risk management models. Developed many quantitative investment strategies primarily based on Machine Learning. | |
| INFORMAL WRITING | <i>Turing Finance (www.TuringFinance.com)</i> | 2013 - Present |
| | A website dedicated to exploring the intersection between Computer Science and Quantitative Finance. I have written many long-form articles about topics including market efficiency, machine learning, algorithmic trading, and multi-agent systems. Turing Finance attracts more than 20,000 visits a month from all over the world. | |
| HONOURS & AWARDS | Received <i>Academic Honorary Colours</i> , University of Pretoria, 2015 | |
| | Received <i>Software Engineering Excellence award</i> , University of Pretoria, 2012 | |
| | Voted <i>Vice-Chairperson</i> , TuksVillage, University of Pretoria, 2011 | |
| | Member of <i>Golden Key International Honours Society</i> , 2010 | |
| | Elected <i>Patrol & Troop Leader</i> , Craighall Scout Troop, 2009 | |
| | Received <i>Colours in Debating & Public Speaking</i> , Hyde Park High School, 2009 | |
| RESEARCH INTERESTS | Computability, Randomness, Algorithmic Information Theory, Machine Learning, Optimization, Economics, Investing, Risk Management, and Derivatives Pricing. | |
| CHARACTER REFERENCES | <i>If necessary, available upon request.</i> | |
| | <i>Email address: stuartgordonreid@gmail.com</i> | |