**Chen Shen**

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**Qualifications Summary**

**Experienced working closely with senior leaders** to build, test, and deploy innovative AI solutions to create a competitive advantage for financial products on the market. **Collaborate with cross-functional teams**, including traders, risk managers, accountants, as well as broker, dealers and industry consultants to deploy machine learning models that blend best-practices across multiple disciplines.

**Utilize analytical thinking** to extract insights from data, and **present findings directly to senior business leaders** and help to interpret what it means to the business. **Proficient in VBA, Excel, R, SQL, Python and MATLAB.**

**Professional Experience**

**RBC – Toronto, Ontario Nov 2021 – Present**

**Senior Manager – Liquid Asset Portfolio**

Leverage AI to enhance asset liability management process at RBC Treasury, from portfolio optimization to performance management and evaluating financial impact from future economic scenarios.

* Implementing an AI based portfolio optimization approach to enhance the traditional optimization method.
  + Producing daily trade ideas by ranking investable securities based on risk/return trade off while considering various regulatory and risk constraints.
  + Recommending rebalancing strategies to optimize portfolio risk sensitivity to interest rates, FX, and to optimize capital and liquidity requirements.
* Creating real-time performance monitoring reports to replace the legacy statistic weekly reports.
  + Using Python to automate and replace the manual reporting process, and in turn improve both efficacy and accuracy of reporting.
* Using Machine learning to model future economic environments and evaluate their financial impact on RBC’s balance sheet.

**RBC Insurance – Mississauga, Ontario 2020 – 2021**

**Big Data Solutions Architect**

Develop and implement data and analytic systems for over-the-counter fixed-income security trading. Responsibilities include system integration, financial report automation, developing trade recommender and portfolio optimization algorithms.

* Integrate various financial reporting and trading systems to allow consistent and timely data consumption and reporting.
  + Collaborating with Bloomberg to integrate its trading platform with RBC internal financial reporting system to allow real-time trade reporting, and developing backend software modules to automate data reconciliation and financial reporting.
* Leveraging big data to transform over-the-counter fixed-income trading practices by providing security-level and portfolio-level analytics.
  + Develop customized python modules in Bloomberg to rank assets according to internal investment policies, and automatically recommend to traders the best daily trades to execute.
  + Identify the optimal set of assets to buy/sell in order to provide the best asset-liability matching under the IFRS17 and the Canadian Asset Liability model guidelines.

**RBC Insurance – Mississauga, Ontario 2018 – 2020**

**Longevity & Demographics Models - Lead**

Created a best-in-class model to optimize pricing for insurance products at RBC, resulting in a gain of over $15 million in profitability in 2019.

* Led a team of data scientist and actuaries to consolidate external and internal insurance data, and developed Machine Learning algorithms that are currently being used to price the Canadian insurance businesses.
  + Working closely with senior leaders to define the project scope, key milestones, and developing a roadmap to keep track of project timeline.
  + Partnering with risk management and the pricing teams to replace traditional actuarial pricing framework with advanced statistical models for various insurance products on the market.
* Promote analytic strategies across RBC Insurance by organizing data science communities to help stakeholders across various businesses identify opportunities to apply prescriptive & predictive analytics.

**Sun Life Financial – Toronto, Ontario 2014 – 2018**

**Longevity Research Analyst**

Served as the sole Longevity Research Analyst collaborating with senior business leaders and various teams across the organization to establish a company-wide longevity view and help to refine the underwriting predictive model for group annuity products.

* Implemented a proprietary model within the company to translate qualitative medical assumptions into quantifiable impact on mortality, and helped to set profitable prices for life and annuity products organization-wide.
  + Received iSTAR Award for developing the first longevity model within the company that can translate qualitative medical assumptions into quantifiable impact on mortality.
  + Lead the modeling process by independently creating and maintaining project plans, tracking deliverables of cross-functional teams of doctors, pharmacist and actuaries, and ensuring timely completion of critical milestones.
  + Cultivated buy-ins from senior business leaders including the chief medical doctor and the chief actuary in order to gain alignment to form a company-wide longevity view.
* Involved in the negotiation of large-scale vendor contracts (upwards of $300k+ annually fee) and acted as the project lead to solicit and implement feedback from both external consultants and internal stakeholders.
* Presented bi-monthly to senior business leaders to communicate the latest developments in healthcare, including new medical breakthroughs and changes in healthcare policies, and helping them interpret what it means to the business.

**York University – Toronto, Ontario 2011 – 2014**

**System Neuroscience Researcher (MSc Degree)**

Published a well-cited research paper on how the brain recognizes and utilizes different types of errors during learning and decision making under the Reinforcement Learning framework.

* Performed statistical analysis (PCA, Monte Carlos simulation) on big data and collaborated with statisticians to implement a novel approach to classify regions of the brain that compartmentalize error information.
* Communicated research at International Neuroscience Conferences and published findings in a top-tier journal that has been cited over 20 times within the first two years of publication (doi:10.1093/cercor/bhu028).

**Education**

**MSc in Neuroscience,** York University (Centre for Vision Research), Toronto, Ontario – 2014

**Bachelor of Medical Science, Honours,** Western University, London, Ontario – 2011