

# Andrew Fleck

New York, NY, USA

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## Personal Statement

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Structurer at BP Power America pricing PPAs, energy derivatives (e.g. HRCOs, RevPuts), load serve and developing tools therein. Former rates validation quant at TD Securities. Additional structured product experience in variable and income annuity modelling and forecasting.

Applied Mathematician by training. Interested in problems in quantitative finance and insurance namely pricing, risk modelling, capital allocation, and decision theory.

## Education

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### York University

PH.D IN APPLIED MATHEMATICS

August 2024

### Toronto Metropolitan University

M.SC IN APPLIED MATHEMATICS

Sept 2016

### Carleton University

B.Sc. DOUBLE HONOURS IN MATHEMATICS AND PHYSICS

June 2014

## Skills and Expertise

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**Mathematics** Probability and Statistics, Stochastic Processes, Optimization

**Finance/Insurance** Derivative Pricing, Risk Factor Modelling, Calibration & Estimation, Risk Measurement & Capital Allocation

**Programming** Python, C++, MATLAB

## Relevant Experience

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### Power Structurer

BP TRADING & SHIPPING

April 24-Ongoing

- Work with the power desk and origination team pricing structured transactions.
- Also work closely with non-commercial stakeholders like Commodity Risk and Quantitative Analytics (the “Quants”) refining our models and supporting existing transactions.
- Heavily focused on PJM default service transactions but also price renewable PPA & HRCO deals across the US.
- Mostly leverage Quant-developed Python libraries but have made significant personal contributions to the development of a codebase dedicated to default load service.
- On a personal note I am also very interested in (and extensively worked on) BESS deals in CAISO & ERCOT.

### Senior Quantitative Analyst

TD SECURITIES

Jan 2023-April 2024

- Was responsible for the initial and ongoing validation of Quantitative models across TD’s trading and banking book.
- Mostly focused on rate exotics pricing, CCR/XVA modelling and backtesting.
- Worked extensively on the transition from LIBOR to SOFR, FRTB/Basel III implementation and the maintenance of our existing pricing library.
- Validated the theoretical and analytical basis of models as well as tested and replicated results. The later done in C++ via an internal TD branch of QuantLib or personal Python code.

### PhD Intern

CANNEX FINANCIAL EXCHANGES LIMITED (FORMERLY QWEEMA GROUP)

Summer 2019 & 2021

- Completed two (MITACS funded) roles at CANNEX with significant work in between and after. The project formed the basis of some of my dissertation research.
- Worked on consistent forecasting of fixed income annuity and structured product performance.
- Used machine learning to accurately simulate relevant indices in a generic way and studied the stochastic volatility properties of said indices.

## Other Experience

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### Course Director & Lecturer

YORK UNIVERSITY

Winter 2021/23

- Math 4281: Ruin Theory and Credibility is an introduction to intermediate level mathematical risk theory. The course ensures an adequate preparation for exam C of the Society of Actuaries.
- Math 2030: Introduction to Probability, Random Variables and Expectation as preparation for further study in either mathematical or applied probability and statistics.

### Academic Internship Supervisor

THE RISK AND INSURANCE STUDIES CENTRE (RISC), YORK UNIVERSITY

Fall 2021

- Every year RISC hosts graduate “HAILVE” interns from YorkU. These interns “present solutions to real world problems in climate risk, strategic management, consumer research, nowcasting, and demographic projections”.
- Each cohort is supervised by an industry supervisor and a academic supervisor (typically a faculty member).
- As academic supervisor joint with a counterpart at RBC Capital Markets we oversaw interns design a segregated fund product (similar to a variable annuity in the US) with an associated maturity guarantee.