

Lucas Durand

Technology Solutions
Associate

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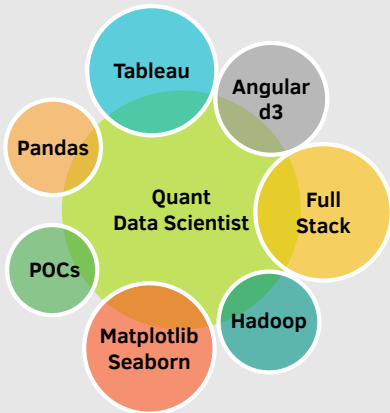


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Skills



Interests

Big Data

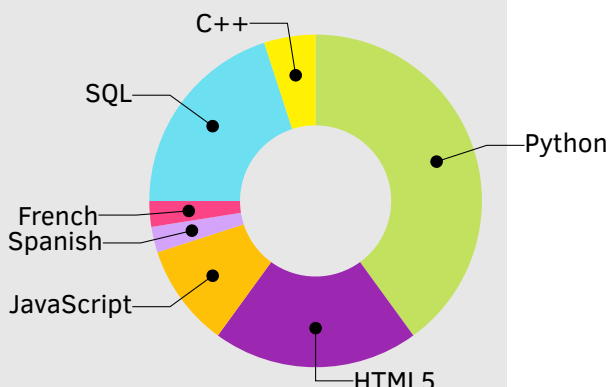
Data Visualization

Quantitative Modelling

Financial Engineering

Machine Learning

Languages



Education

2014 - 2016 **MSc., Theoretical Physics**

Toronto, Ontario, Canada

Visiting Researcher at Perimeter Institute (PI) in Waterloo

York University

2009 - 2014 **BSc., Physics & Philosophy**

Toronto, Ontario, Canada

Senior Thesis – Graphene: Hartree-Fock Analytics and Numerics

Trinity College, University of Toronto

Research

2014 - 2016 **Major Research Project - inSIDious Matter**

Tulin Research Group

- Phenomenological exploration of a model for an inelastic self-interacting dark matter particle
- Theoretical formulation of scattering quantities by tensor calculus and numerical partial-wave analysis to determine valid parameter-space for theory.
- New efficient techniques for numerically determining scattering cross-sections in the classical regime are implemented.

Experience

Feb 2017 -
Present

Solutions Developer - Associate
Treasury Analytics Group

TD Bank Financial Group

- Thorough benchmark and stability testing of quasi-Monte Carlo methods shows marked increase in convergence speed for mortgage-backed security valuation model, allowing for Key Rate Vega and Convexity hedging
- Strengthened understanding of Financial Engineering and numerical analysis, transferring knowledge in a very successful Lunch n' Learn, which utilised Jupyter RISE to deliver interactive code and live animations

Jul 2016 -
Feb 2017

Business Systems Analyst - Associate
Enterprise Fraud Analytics Program

TD Bank Financial Group

- Subject Matter Expert (SME) for Identity & Access Management. Developed Role-Based Access Management tools to automate RBAC reporting.
- Interfaced between business and Testing Centre of Excellence to facilitate continuous testing on vendor platform delivery.

Apr 2014 -
Sep 2015

Application Analyst
Equities Support

National Bank Financial Markets

- Worked from Exchange Tower trading floor, directly interfacing with traders and senior management
- Created ETL framework and Tableau dashboards to provide meaningful business insights from global equities trade data
- Designed and implemented Angular.js Big Data POC for legal compliance reporting. Consolidated data from legacy Sybase servers into local SQLite database to increase search speeds by
- Explored use cases for Bokeh, d3.js for visualising real-time market performance data