Leonid Nediak

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WORK EXPERIENCE

Ontario Teachers' Pension Plan **Sep 2023 – Aug 2024**
Investment Risk, Programming, and Quantative Modelling [Internship] *Toronto, ON*
- Implemented two new finite-difference solvers for Black-Scholes with local volatility, and did performance analysis.
- Rewrote the sensitivities engine to use an OOP structure to properly track market data dependencies.
- Migrated our model library repository from .NET Framework to .NET 8 and implemented various performance optimizations.

Urban Data Centre **May – Aug 2023**
AI/NLP Engineer [Internship] *Toronto, ON*
- Created a benchmarking suite to assess knowledge sources (which would simply be models for various NLP tasks) of a model to parse natural text descriptions of social services into a standard format.

Scotiabank **Sep – Dec 2022**
GRM Analytics and Model Development Internship *Toronto, ON*
- Implemented (using Flask) the front-end interface for calling a risk assessment model.
- Researched and implemented methods of optimizing a distributionally robust model designed for variance regularization.
  - A distributionally robust model is one where the objective is the supremum of the expected loss, where the supremum is taken over a set of distributions.

Zeno Labz **May – Aug 2022**
Embedded Software Developer [Internship] *Toronto, ON*
- Set up and implemented the GUI for a small TFT display using an Arduino, which involved:
  - implementing anti-aliased rasterization of the many visuals in the GUI, pretty much from scratch, as the few libraries for this were far too limited for our purposes
  - implementing the logic for navigation and time-varying visuals

Nediak Analytics **2019 – 2020**
Software Developer *Kingston, ON*
- Designed an R package to produce uplift decision trees based on "Personal Lending: Customer Credit and Pricing Optimization" by Yuri Medvedev.
- Implemented said R package in C++ using Rcpp, adding optimizations.
- Uplift models can be used to isolate the effectiveness of specific marketing actions by identifying the customers most likely to respond positively to said action.

EDUCATION

University of Toronto **2021 – 2025**
Honours Bachelor's of Science, Math Specialist and CS Specialist
- GPA: 4.00
- Scholarships: University of Toronto Scholar (2023), New College Council In-Course Scholarship (2023, 2024, 2025), Margaret Ronald Taylor and Thomas Paxton Taylor Scholarship in Mathematics (2024)

PROJECTS

Exploring Approaches to Rendering a Higher-dimensional Dynamically Generated Block World **2021**
- Created a dynamically generated open block world in higher dimensions (>3), rendered as a set of 3D slices of said world (space).
- Based on my working prototype rendering a pre-generated maze [at labyrinth-scuffed].
- I implemented two approaches: concurrently generating a list of triangles to rasterize using simple computational geometry, and using OpenCL to raycast through the GPU-generated terrain.
- Link: https://github.com/lnediak/hypervoxel

SKILLS

- **Skills:** C++, C#, Java, Python, Javascript, Git, OpenGL, OpenCL, Data Analysis, Mathematical Problem-Solving