Alexander De Costa

Aspiring ML Engineer — U of T Math and Stats Graduate
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Objective

Aspiring ML engineer with a strong background in mathematics and probability, currently building full-scale machine learning APIs. I focus on translating cutting-edge models into scalable, well-engineered systems. Passionate about bridging theory and practice to deliver real-world AI solutions, with mathematical interests including functional analysis and probability theory.

Technical Skills

- **Programming:** Python, R, SQL
- **Data Analysis:** Wrangling, visualization, exploratory analysis
- **Machine Learning:** Implemented core models in PyTorch (e.g., logistic regression, decision trees, ensembles); currently building full-scale APIs from SOTA ML research
- **Mathematics & Statistics:** Strong background in functional analysis, measure-theoretic probability, multivariable calculus, linear algebra, and statistical inference; currently focused on the math behind kernel and probabilistic methods.
- **Tools:** Jupyter, RStudio, Excel, Power BI

Experience

Manulife *Jan 2023 – May 2023*
Actuarial Student – Experience Analytics

- Updated reports assessing assumptions in valuation and pricing models.
- Built data tables and charts using R, SAS, and SQL; collaborated on team-wide programs.
- Flagged data issues and streamlined experience study pipelines.

Education

University of Toronto, St George Campus *Sep 2020 – May 2025*
BSc, Mathematics and Its Applications Specialist (Probability/Statistics)

Projects

ML Engineering APIs

- **Gaussian Process Regression API (Ongoing)** – Developing a scalable FastAPI-based service implementing Bayesian regression with GPyTorch. Designed to provide probabilistic predictions with uncertainty quantification, supporting informed decision-making in high-stakes domains such as finance and healthcare. Focused on modularity and performance for seamless integration into production ML pipelines.