Alexander De Costa

Aspiring ML Engineer — U of T Math and Stats Graduate

Toronto, Ontario

416 200 4181   alexander.decosta@outlook.com

github.com/alexanderdecosta

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:** PyTorch, 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

- **Scalable Energy Forecasting API (Ongoing)** – Building a production-ready API using FastAPI for energy demand forecasting. Implementing scalable Gaussian Process Regression models from first principles to handle large datasets, with custom kernel design and inference optimization. Benchmarked against standard models (e.g., XGBoost, ARIMA) with focus on uncertainty quantification, modularity, and deployment readiness.