

Esmaeel (Mohammad) Yahyatabar

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📍 Montreal, QC (intending to relocate to Ontario)

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Hiring Team
RBC Borealis
Toronto, Ontario

Dear Hiring Team,

I am writing to apply for the Senior Machine Learning Research Engineer position at RBC Borealis. Your applied-research model of taking novel algorithms from data exploration and prototyping through to production-quality software describes exactly the work I have done for the last several years, and the work I do best.

I hold a Ph.D. in Computer Engineering from Polytechnique Montreal, with a research focus on interpretable deep learning that produced high-impact, peer-reviewed tools for pediatric ARDS diagnosis and automated severity stratification. At Junction AI, I have translated that research rigor into production-grade systems, architecting LLM-based RAG platforms that integrate semantic and keyword retrieval with chain-of-thought prompting. I write modular, tested Python and PyTorch code under professional engineering practices such as code review, version control, and continuous integration, and I own the end-to-end lifecycle: optimizing vector-database performance, comparing prototypes against baselines, and building reusable, rubric-based evaluation tooling that quantifies model quality for the wider team.

Just as importantly, I work closely with business and clinical stakeholders to understand a problem and rapidly prototype solutions, then collaborate with engineers to integrate those algorithms into products and document the design decisions behind them. My background combines the high-stakes reliability required in clinical AI with the scalable, fast-paced engineering needed to turn novel research into robust software, a pairing that maps directly to your team's mandate of delivering AI projects end to end across generative AI, NLP, and time-series analysis.

What I would bring to RBC Borealis is the combination your team values: genuine research depth plus the engineering to make it real. I intend to relocate to Ontario, and I am drawn to RBC Borealis' standing as one of Canada's leading applied-AI research environments.

I would welcome the chance to discuss how my background fits your team's roadmap, and I thank you for your consideration.

Sincerely,

Esmaeel (Mohammad) Yahyatabar