Senior Principal AI Engineer

Requisition	R0000179597
Employer	Royal Bank of Canada
Canadian locations	Toronto (Ontario, Canada)
Primary address	600 QUEENS PLATE DR, TORONTO, ON M9W 0A4, Canada
Posted	November 2, 2026
Date in the description	July 8, 2026
Posted deadline	November 30, 2026
Last day to apply	November 29, 2026
Business area	TECHNOLOGY AND OPERATIONS
Employment status	Regular
Work schedule	Full time · 37.5 h per week
Pay type	Salaried

The position

We're looking for an experienced Senior Principal AI Engineer who will bring strategic leadership and deep subject-matter expertise in designing and implementing enterprise-scale AI/ML infrastructure, automation tools (MLOps and DevOps), and cloud-native AI solutions. This is a unique opportunity to lead and shape the future of machine learning infrastructure and work with a team of passionate individuals committed to bringing ML to the enterprise.

Responsibilities

- Leading the design, architecture, and optimization of machine learning deployment tools and automation systems that operate the business's data and ML applications
- Identification and implementation of best practices and standards for data and machine learning pipelines across the organization
- Collaborate with engineers and researchers in machine learning to automate code analysis, construction, integration and deployment of ML applications
- Provide technical advice on infrastructure design decisions and monitoring solutions
- Build highly scalable and resilient cloud and on-site systems to host machine learning systems using advanced technologies, including Google Cloud Platform (GCP) and Vertex AI
- Mentoring of junior engineers and contributing to team growth and technical excellence

Qualifications

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Requirements

- In-depth experience in designing and implementing ML systems distributed at scale
- Practical experience of GCP services, in particular Vertex AI for model training, deployment and monitoring
- Experience in building and integrating AI Generative solutions, including LLM, RAG architectures and AI harness/orchestration frames (e.g. LangChain, LlamaIndex)
- Competency with MLOps orchestration tools such as AirFlow, KubeFlow, Dagster or Flyte
- Experience with DevOps pipelines (Jenkins, GitHub Actions)
- High Python programming skills; Bash or JavaScript knowledge has more
- Practical experience in deploying hybrid environments through GCP, AWS and/or Azure
- Familiarity with ML settings such as PyTorch or TensorFlow
- Knowledge of best practices in software engineering, including testing, code testing and source control

About the AI Group

RBC's AI Group is the AI accelerator for RBC, with a focus on driving the shift from early-stage AI projects to scaled, client outcomes that amplify the impact of RBC's people. In addition to helping scale the biggest AI opportunities at RBC, the AI Group is responsible for advancing research into emerging use cases across generative and agentic AI, while maintaining expertise in security, responsible AI and regulatory expectations. The Business Enablement function within the AI Group partners with LOBs and Functions to set AI ambition, originate transformation opportunities, and frame programs for delivery — ensuring RBC remains at the frontier of AI-enabled value creation.

Inclusion and Equal Opportunity Employment

RBC is an equal opportunity employer committed to diversity and inclusion. We are pleased to consider all qualified applicants for employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, disability, protected veterans status, Aboriginal/Native American status or any other legally-protected factors. Disability-related accommodations during the application process are available upon request.

Job Skills

Massive data management, data modelling, data science, decision-making, deep learning, automatic learning (ML), predictive analysis, programming languages, relationship building

RBC accepts applications until 11:59 p.m. on the day before the posted deadline.

Our Employment Opportunities

RBC works as One RBC and follows five shared values: putting clients first, integrity, collaboration, respect and excellence. As one of the world’s largest and most successful banks, it sees inclusion and different perspectives as important to continued growth. RBC supports staff in doing their best work, working together, innovating and developing professionally. Its policies and programs foster respect, belonging and opportunities for everyone to create value for clients and communities.

Talent community

People who join RBC’s talent community can receive new postings, career advice and recruitment event updates tailored to their interests.

RBC’s careers portal shares information about career paths and how its teams contribute to client and community well-being.

RBC is accepting applications for an existing vacancy. Qualified applicants may hear from the recruitment team for a more detailed review of their résumé.

Search for requisition R0000179597 on the RBC careers portal.

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