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Montréal, QC, Canada

Konstantin Volodin

Data Scientist

konstantin-volodin.github.io
github.com/Konstantin-Volodin
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Skills

Competencies	Data Science & Engineering, Decision Sciences, Software Development
Tech Stack	**Languages:** Python, SQL, R **Data/ML:** Power BI, PySpark, PyTorch, Plotly, Gurobi **Platforms:** Git, AWS, Docker, DataBricks

Experience

Data Scientist, Advanced Analytics Solutions Center — **Oct 2022 — Present (Full-time)**
Immigration, Refugees and Citizenship Canada — *Remote / Ottawa, Canada*

- Work in a cross-functional team with Software Engineers, Product Managers, and Business Analysts to build data-driven decision-support tools used in daily operations.
- Lead engineer for the Temporary Resident Visa predictive platform, the highest-volume file classification system on our team, scoring approximately 150,000 files per week.
- Migrated an SPSS monolith into a production PySpark pipeline; refactored 10,000 LOC of Python and improved end-to-end performance by 15%.
- Design and maintain a 30+ bin classification system that consolidates 40+ SQL views and powers daily decisions for hundreds of IRCC officers.
- Own and produce 10+ weekly operational reports, manage downstream data contracts, and deliver ad-hoc analyses informing operational KPIs and business decisions.

Data Analyst, Anti-Racism Task Force — **Dec 2020 — Oct 2022 (Full-time)**
Immigration, Refugees and Citizenship Canada — *Ottawa, Canada*

- Served as a technical lead for an Anti-Racism Task Force team; set analytics priorities and drove deliverables.
- Ran a department survey and HR analyses that uncovered hiring inequities and informed policy decisions.
- Prepared executive-ready briefings, converting analyses into actionable insights that secured leadership buy-in.

Research Assistant — **Feb 2020 — Aug 2020 (Full-time)**
Ottawa Hospital Research Institute — *Ottawa, Canada*

- Analyzed patient-level and scheduling datasets to prepare inputs for optimization and simulation models.
- Applied operations research techniques to improve patient scheduling, block scheduling, and capacity planning.

Research Assistant — **Mar 2023 — Aug 2023 (Part-time)**
McGill University — *Montreal, Canada*

- Built and deployed two public-facing sites (AWS/GCP) for animal-accident management and glyphosate research.
- Animal-accident site tracks accidents and optimizes wildlife-crossing placement via a facility-location model.

Research Assistant — **May 2019 (Part-time)**
University of Ottawa — *Ottawa, Canada*

- Applied Markov Decision Process model for surgery scheduling to reduce wait times for high-priority patients.
- Conducted simulation experiments to evaluate hypotheses and support a master's student thesis.

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Education

Master of Management in Analytics, *McGill University, Desautels Faculty of Management* — Jul 2022 — Aug 2023

Bachelor of Commerce (Finance), *University of Ottawa, Telfer School of Management* — Sep 2016 — Apr 2020

Projects

Infinite DnD — **July 2025 — Present**

Personal

- Developing an LLM-agent system using open-source models to run Dungeons & Dragons campaigns from user-defined configurations; supports fully automated play or mixed human/agent interaction.
- Architected modular LLM agents with scoped world knowledge to improve response accuracy and separation of concerns.
- Implemented persistent world state, enabling agent to create lasting consequences (quests, NPCs, events).
- Designed and implemented a React frontend to present narrative, visualize world state and agent logs, and capture user input.

Academic Consulting Project — **Oct 2022 — Apr 2023**

CAE Inc. — *Montreal, Canada*

- Developed a time-series forecasting pipeline to predict demand for thousands of aviation components, with automatic algorithm selection based on component characteristics and historical performance.
- Designed an inventory management policy balancing forecast uncertainty, lead times, and service-level targets to reduce stockouts and holding costs.
- Communicated results in an executive report, translating technical findings into actionable procurement and operations recommendations.

Workload Allocation — **May 2019 — Feb 2020**

Telfer School of Management — *Ottawa, Canada*

- Designed and solved a mixed-integer optimization model to generate a full-year teaching schedule, decreasing planning time from weeks to hours and improving constraint satisfaction.
- Implemented a production web app (React frontend, Django backend) enabling staff to run scheduling scenarios.
- Enhanced the model by adding soft constraints for instructor preferences and room capacities, improving fairness and utilization.

About me

- **Languages**: English (fluent); Russian (fluent); French (B1).
- Active rock climber, hoping to progress toward multi-pitch outdoor routes and challenging boulder problems.
- Avid fantasy reader of both classic and contemporary epics.
- Aspiring house dancer, practicing foundational footwork and freestyle.