

# GEORGE SAAD

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## Education

### University of Toronto

MASc (Thesis-based), Research in LLMs & Recommendation supervised by Prof. Scott Sanner

Sep. 2023 – Jan. 2025

GPA: 4.0 (out of 4.0)

### University of Toronto

BASc in Engineering Science, Major in Machine Intelligence, Certificate in Engineering Business

Sep. 2019 – May 2023

GPA: 3.76 (out of 4.0)

## Experience

### Amazon

Applied Scientist

New York City, NY

Mar. 2025 – Present

- Working with LLMs & Recommender Systems for Conversational Ad Experiences

### University of Toronto

Toronto, ON

Research Assistant

May 2023 – Feb. 2025

- Researching LLM-integrated conversational recommenders to advance state-of-the-art recommendation at D3M Lab

Teaching Assistant

Sep. 2021 – Dec. 2024

- Teaching Assistant for Python, Data Science, Data Structures & Algorithms (in C), and Computer Systems courses

### Amazon

Seattle, WA

Applied Scientist Intern

Jun. 2024 – Sep. 2024

- Developed a model to improve product search ranking by 29%, impacting over 8.5 million weekly queries on Amazon
- Implemented & tested production-ready code to allow the engineering team to integrate with Amazon's search engine
- Performed extensive prototyping, literature review, and evaluation to present to 50+ team members, including scientists

### Vector Institute

Toronto, ON

Applied Machine Learning Intern

Jan. 2023 – Sep. 2023

- Evaluated causal inference estimators such as **TARNet** and **Dragonnet**, on data with no ground truth counterfactuals
- Led lectures & hands-on sessions on causal estimation & recommender systems for 200+ technical participants, including data scientists and executives from 40+ teams across major sponsors such as RBC, Deloitte, Shopify & Air Canada

### Meta (Instagram)

Menlo Park, CA

Software Engineer Intern

May 2022 – Jul. 2022

- Built a **Thrift** service to track over 260M external Instagram links daily, improving Ads ranking signals
- Developed app detection in **Swift/Kotlin**, boosting ad impressions by 120% for unlinked users
- Optimized Instagram Ads endpoints in **Hack (PHP)** and **Python Django**, reducing runtime and memory overhead

### Content Turbine

Mississauga, ON

Software Development Freelancer

Dec. 2020 – Sep. 2021

- Built NoSQL database & caching modules for Play!, Vert.x, & JHipster frameworks in **Java** using **Singleton** and **Dependency Injection (DI)** design patterns, with Guice and JUnit unit testing and ASCIIDOC documentation

### Loblaw Digital

Toronto, ON

Software Development Co-op

May 2021 – Aug. 2021

- Researched & presented content targeting engine to the 40+ member PC Optimum team, increasing personalization
- Implemented multiple endpoints & metrics in **Spring Boot Java** with **GCP** with 200k+ data points collected per hour

## Publications / Research

**Q-STRUM Debate: Query-Driven Contrastive Summarization for Recommendation Comparison** | Paper

G. Saad, S. Sanner - *arXiv* 2025

**Elaborative Subtopic Query Reformulation for Broad and Indirect Queries in Travel Dest. Rec.** | Paper

Q. Wen\*, Y. Liu\*, J. Zhang\*, G. Saad, A. Korikov, Y. Sambale, S. Sanner - *ROEGEN @ RecSys* 2024

**Multi-Aspect Reviewed-Item Retrieval via LLM Query Decomposition and Aspect Fusion** | Paper

A. Korikov\*, G. Saad\*, E. Baron, M. Khan, M. Shah, S. Sanner - *IR-RAG @ SIGIR'24*

**Using Pre-Training to Speed Up Deep Reinforcement Learning** | Paper

G. Saad - *University of Toronto Undergraduate Thesis*, 2023

\* indicates equal contributions.

## Technical Skills

**Languages:** Python, Java, JavaScript, C/C++, PHP/Hack, HTML/CSS, YAML, PostgreSQL, MATLAB

**Technologies:** PyTorch, JAX, Numpy, Pandas, Scikit Learn, Matplotlib, Spring Boot, React, Node, Flask, Django