Jordan **Lanctôt**

COMPLEX SYSTEMS DATA ANALYST | ARTIFICIAL INTELLIGENCE ENGINEER

PhD candidate in Complex Systems (2026, Toronto Metropolitan University) with expertise in Python, PyTorch, TypeScript, and Julia. My work bridges AI research and software development, tackling everything from AI-driven security enhancements to pandemic trend analytics. A strategic thinker with technical mastery, I transform complex issues into clear, actionable solutions. Ideal for roles demanding a blend of technical mastery and forward-thinking problem-solving.

Socials

jordan.lanctot@torontomu.ca

@JDLanctot

Jordan Lanctot

JDLanctot

Publications

Jordan D. Lanctot

0009-0003-0573-0969

Programming

- **python**
- **LaTeX**
- **TypeScript**
- **Julia**
- **MATLAB**
- **html, css**
- **PHP, SQL**
- **Lua**
- **Java**

Languages

English Native

French Fluent

Education

2026 **Physics**
Ph.D. · In Progress
Toronto Metropolitan

2022 **Physics**
B.Sc. · Honours
Toronto Metropolitan

2015 **Audio Engineering**
Diploma ·
Recording Arts Canada

Work Experience

2024 – PRESENT

RCLUB
Technology Operations Specialist · Toronto

- Managed and maintained the club's digital presence through website and mobile application administration using PeopleVine CRM, ensuring seamless user experience for luxury car enthusiasts.
- **Oversaw network infrastructure** including Unifi device configuration, Ethernet installations, and comprehensive troubleshooting to support high-performance connectivity throughout the venue.
- Directed audio-visual operations utilizing Behringer X32 mixing console for sophisticated sound management during member events, live presentations, and multimedia experiences.
- Configured and optimized integrated audio routing from multiple input sources including media players, wireless microphones, and live performances to create immersive club environments.
- Collaborated with management to identify and deploy technological improvements that aligned with the premium brand identity of the luxury automotive club.

2022 – PRESENT

Toronto Metropolitan University
Graduate Research Assistant · Toronto

- Conducted extensive research in the field of artificial intelligence and competitive reinforcement learning, developing novel algorithms and models that improved upon existing methods.
- Graded papers, labs, and exams for undergraduate students, providing valuable feedback that helped students understand complex concepts and improve their grades.
- Led laboratory exercises for undergraduate students, teaching hands-on skills in data analysis, simulation, and visualization using Python.
- Showcased technical proficiency in Python programming and command line, utilizing these tools to analyze and interpret complex data, run simulations, and visualize results.
- Contributed to **multiple peer-reviewed publications** in journals and conferences, presenting the results of the research and its impact on the field.

2020 – PRESENT

DOCKETS.ca
Software Development Consultant · Toronto

- Improved the user experience and overall functionality of the Dockets.ca SaaS through strategic product consultation.
- Established a strong brand image for the software by developing and executing a comprehensive branding strategy, including style guides, logos, and application icons.
- Streamlined the onboarding process for **provincial bodies** by creating informative and easy-to-follow video tutorials and demo videos.
- Demonstrated expertise in the Adobe Creative Suite, to create visually appealing and professional materials that effectively showcased the software's features and capabilities.
- Worked closely with cross-functional teams to ensure that branding and marketing efforts aligned with the company's goals and vision.

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Supervision

- 2 x Summer Research Assistant · 2025
- Undergraduate Thesis Student · 2024–2025

Awards

- OGS 2025 $15,000
- Complex Systems Day 2nd Best Poster
- Complex Systems Day Best Short Talk
- NSERC 2023 $17,500
- Connections in Science · $1,000
- NSERC 2021 $12,000
- Dean's List 2021–2022
- Dean's List 2020–2021
- Dean's List 2019–2020
- Polaris Prize Long List · 2019

Skills

- Artificial Intelligence
- Reinforcement Learning
- LLM Response Sanitation
- Data Analytics
- Full-Stack Web Development
- Database Design
- Creative Strategy
- Audio Engineering

Work Experience

2021

Toronto Metropolitan University
NSERC Grantee and Research Assistant · Toronto

- Applied advanced statistical and machine learning techniques to conduct research in three domains within the prediction markets: universality, efficiency and tribalism, and time series clustering.
- Possessed a strong understanding of data analysis, feature engineering, model selection and evaluation, and hypothesis testing.
- Worked closely with research team to develop and implement descriptive models, resulting in improved understanding of Prediction Markets at large.
- Analyzed and interpreted large and complex datasets, presenting findings in a clear and impactful manner to both technical and non-technical audiences.
- Co-authored three papers in preparation for publication, showcasing the results of research and contributing to the advancement of the field.
- Presented research findings at conferences (**American Physical Society**) and workshops, effectively communicating technical information to a diverse audience.
- Contributed to the development of tools and libraries, collaborating with cross-functional teams which improved research lab efficiency.

2020

Toronto Metropolitan University
Research Assistant · Toronto

- Conducted in-depth statistical and **geospatial analysis** of large cell-phone datasets (**200+ GB**) to evaluate the impact of social distancing measures on COVID-19 spread and superspreader events
- Applied statistical physics and information theory to model virus transmission and determine key risk factors
- Successfully parsed, cleaned and analyzed large datasets to ensure accurate findings
- Created clear and impactful visualizations using MATLAB to effectively communicate research results to diverse audiences
- Authored a scientific paper as a first-author, showcasing findings and implications of the research on social distancing and COVID-19 spread
- Studied COVID-19 data to assess the effectiveness of public health measures and support with government policy decisions
- Worked closely with interdisciplinary teams of researchers to synthesize complex data and derive actionable insights
- Presented research at conferences and workshops, effectively communicating complex ideas and results to academic and non-academic audiences.

Open-Source Contributions

2023–PRESENT

Next.js eCommerce
Open Source Repo · Toronto
As a contributor to a Next.js eCommerce framework on GitHub with over **4.7k stars**, I've played a pivotal role in enhancing its functionality and stability. This project aims to simplify the development of dynamic and user-friendly eCommerce websites.

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Presentations

- Complex Systems Day 2025
- Complex Systems Day 2024
- 2024 CAP Congress 2024
- Complex Systems Day 2023
- APS March Meeting 2023
- Complex Systems Day 2022
- CUPC 2021

Boards

- VP of Finance
  PGSU · 2024

Mentoring

- Secondary School Rowing Coach 2013
- Secondary School Rowing Coach 2012

Specializations

Artificial Intelligence · Machine Learning · Adversarial Learning · **LLM Integration** · PyTorch · Data Sanitation · **Data Analysis** · Software Development · Computational Modeling · Python · Numpy · Pandas · Postgres · MySQL · **React** · NextJs · Ecommerce · Stripe · Adobe · Microsoft Office · Neovim

Papers

2024

Mitochondrial network branching enables rapid protein spread with slower mitochondrial dynamics

DOI: https://doi.org/10.1103/PRXLife.2.043005

Second Authorship · Toronto

Mitochondrial network dynamics, involving fusion and fission, impact protein and molecule distribution. Simulations show that well-connected and dynamically faster networks enhance particle spread, with branching networks formed through end-to-side fusion achieving optimal distribution, demonstrating the role of network structure in mitochondrial function.

2022

Network Defense

Undergraduate Thesis · Toronto

Explored the capacity for Artificial Intelligence to learn features about networks, such as the Power Grid, and how hiding information about such networks from Artificial Intelligence can limit network vulnerabilities.

In Preparation

Stochastic Network Defense

First Authorship · Toronto

Investigated novel approaches using Deep Reinforcement Learning to develop robust defense strategies against network attacks, with a focus on concealing network structures and mitigating vulnerabilities.

In Preparation

Universality in Betting Markets

Second Authorship · Toronto

In prediction markets participants buy and sell contracts tied to the outcome of real-world events. Universal trends in the odds and outcomes of these markets over time were discovered within a diverse dataset of betting contracts.

In Preparation

COVID Mobility Patterns

Co-First Authorship · Toronto

Millions mobile phone records from the Chicago MSA were used to study how social distancing policies did (or did not) reduce these density "hotspots," and the mobility patterns of people were impacted during these policies.

Projects

2023–PRESENT

LaTeX Template

Open Source Repo · Toronto

Created a repository containing LaTeX templates to streamline the document preparation process for academic and research purposes. These templates cover various document types such as research papers, reports, and presentations, providing users with a starting point for formatting their documents professionally and efficiently.

2022–PRESENT

Scientific Computing Installation

Open Source Repo · Toronto

Developed and shared computer configuration files aimed at improving computational productivity for researchers. These files include settings and optimizations tailored to enhance the performance of computing systems, ensuring researchers can maximize their efficiency and focus on their work without worrying about system configurations.

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Audio Engineering

- Weird Karma
  Album · 2021
- Summer Drive
  Album · 2019
- 7 Months Back
  Album · 2019
- bellwoodsonmars
  Album · 2019
- 999
  Album · 2019
- 121
  Album · 2018
- nah it's fine, man.
  Album · 2017
- Little Red Documentary
  TVO · 2017

Data Analyst

2019

The Young Canadians Roundtable on Health: promising practices for youth and adults working in partnership

DOI: https://doi.org/10.17269/s41997-019-00254-9

Data Analyst · Toronto

Youth and adult allies engaged in a participatory research evaluation of the YCRH, which was identified as a living laboratory, where youth could experiment with ideas and provide new perspectives on health issues. Adult allies reported learning new skills from youth, and youth gained advocacy and leadership skills. Collaborative projects resulted in a sense of shared achievement. Further, youth increased their connections to health and youth-serving spaces across the country. Identified challenges included difficulties in coordinating a national roundtable and defining shared responsibilities.

2018

Engaging diverse Canadian youth in youth development programs: Program quality and community engagement

DOI: https://doi.org/10.1016/j.childyouth.2018.09.023

Data Analyst · Toronto

Youth development programs are key tools in promoting community engagement, which is a core feature of positive youth development. However, further research is needed on program quality and outcomes for diverse samples of youth. We examined program quality (positive features and youth-adult partnership) within youth programs, as predictors of three indicators of community engagement in a diverse youth sample (N = 321; Mean age = 16.2 years; SD = 3.0). Both positive program features and youth-adult partnership were positively related to youth civic participation, sociopolitical empowerment, and sense of community. Among our background variables, only LGBTQ status, perceived income, and age were related to community engagement. Positive associations between program quality and community engagement held across sample characteristics. Findings add to the limited research on youth development programs and youth's community engagement.

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