

Foundations and Mechanisms of Modern Natural Language Processing and Large Language Models

Oct. 29, 2026

2:30 p.m. – 3:30 p.m. (CDT)

A474 4th floor Chown

In-person

Presenter: Dr. Lei Ding, Assistant Professor UM

Dr. Lei Ding is an Assistant Professor in the Department of Statistics at the University of Manitoba. He received his PhD in Statistical Machine Learning from the University of Alberta in 2024. His research focuses on the intersection of large language models (LLMs), natural language processing (NLP), and statistical learning.

Overview

This seminar offers an accessible introduction to how large language models work, from next-token prediction to instruction-following AI assistants. We will examine how models generate text, how the Transformer architecture uses context, and how pretraining and post-training shape model behavior. We will then connect these ideas to practical use through prompting and retrieval-augmented generation, discussing how instructions and external information affect model responses and where errors can arise.

This event is open to faculty, staff, trainees, students, and anyone interested in bioinformatics, biostatistics, or epidemiology.

Questions? Contact brenden.dufault@umanitoba.ca