Module 04: Foundations of Probabilistic Programming

FCIT 607: Data, Methods, and Models for Future Cities

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Abstract

This learning module …

Module Overview

> "No causes in, no causes out!" - Nancy Cartwright (1989), *Nature's Capacities and Their Measurement*. Oxford: Clarendon Press.

Learning Objectives

> By the end of the course module, students will be able to:
>
> 1. Coming soon…
> 2. Coming soon…
> 3. Coming soon…

Module Topics

- We Can Do Better Than the Status Quo!
  - Centring Causality and Uncertainty with Causal and Bayesian Inference
- What are models? What is Causal Inference?
  - Making Our Assumptions Explicit (Part 1): Graphical Models
- What is Bayesian Inference?
  - Counting and the Reallocation of Credibility Across All Possibilities
- Conceptual Causal Models Come First, Statistical Models Come Second

Assigned Reading + Lecture Slides

- Foundations of Probabilistic Programming
- Module 4 Slides

Lab

Coming soon…

Questions, Tasks, and Challenges

Coming soon…

Recommended Additional Resources

- Coming soon…

References

Cartwright, Nancy. 1989. *Nature's Capacities and Their Measurement*. Clarendon Press.