Introduction

Causal Graphs

In statistics, econometrics, epidemiology, genetics, and related disciplines, causal graphs (also known as path diagrams, causal Bayesian networks, or DAGs) are probabilistic graphical models used to encode assumptions about the data-generating process.

Causal graphs can be used for communication and for inference. As communication devices, the graphs provide a formal and transparent representation of the causal assumptions that researchers may wish to convey and defend.

Casual graph models

Graphical causal models are a language for encoding theories, which allows us to assess their implications and to understand which estimates are, in principle, causal effects. Modeling causality through graphs brings an appropriate language to describe the dynamics of causality.

Workflow

- Read the data
- Perform exploratory analysis on it
- Extract features and scale the extracted feature
- Split the data into training and hold-out set
- Create a casual graph using a different technique
- Examine the model performance based on the graph

Skills:

- Modelling a given problem as a causal graph
- Statistical Modelling and Inference Extraction
- Building model pipelines and orchestration

Knowledge:

- Knowledge about the casual graphs and statistical learning
- Hypothesis Formulation and Testing
- Statistical Analysis

Installation

- pip install causalgraphicalmodels

Resources

- https://github.com/sharmaroshan/Breast-Cancer-Wisconsin/blob/master/Breast cancerDiagnosis.ipynb
- https://github.com/Gyubin/WDBC_analysis
- https://towardsdatascience.com/building-a-simple-machine-learning-model-on-breast-cancer-data-eca4b3b99fa3
- https://medium.com/swlh/breast-cancer-classification-using-python-e83719e5f97d
- https://github.com/raviolli77/machineLearning_breastCancer_Python/blob/master/notebooks/02_random_forest.ipynb
- https://github.com/chb005/Machine-Learning-Hindi-Playlist
- https://github.com/DataForScience/Causality
- https://github.com/rguo12/awesome-causality-algorithms
- https://github.com/jrfiedler/causal_inference_python_code/blob/master/chapter12.ipynb
- https://github.com/shubamsumbria66/Breast-Cancer-Pred/blob/main/models/src.py

Related Packages

- Causality
- CausalInference
- DoWhy