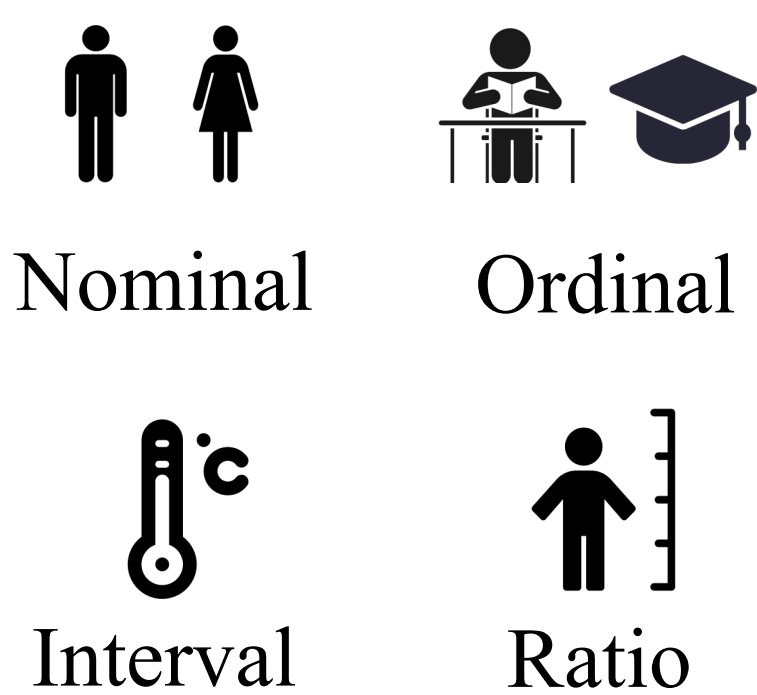


Tabular data prediction with heterogeneous features

Hedong YAN, CS, HKBU
Supervisor: Yiuming Cheung

Motivation

Tabular data is usually heterogenous:



Neural models usually behave NOT well on heterogeneous data.

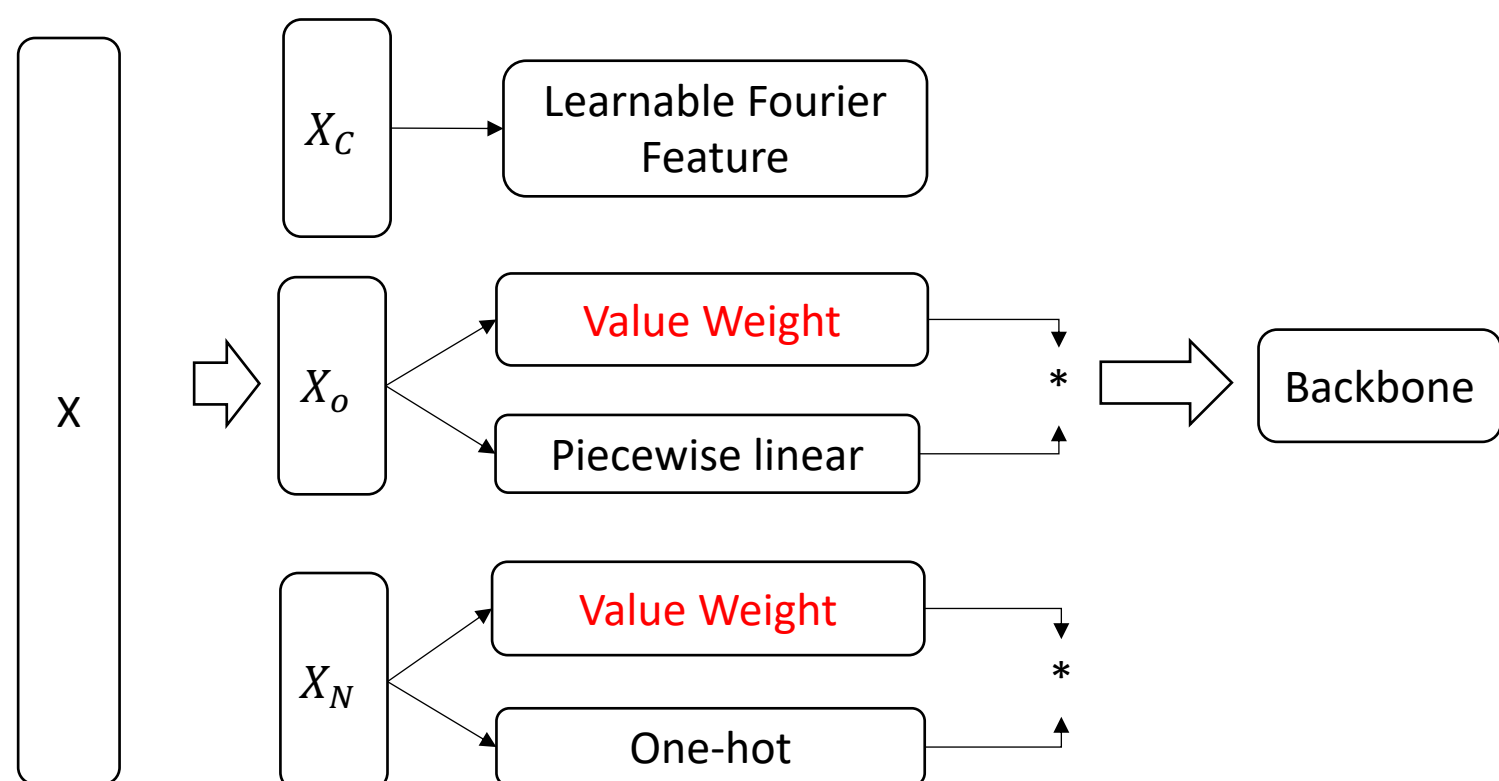
Problem

How to deal with heterogenous features for neural networks?

Methodology

Idea

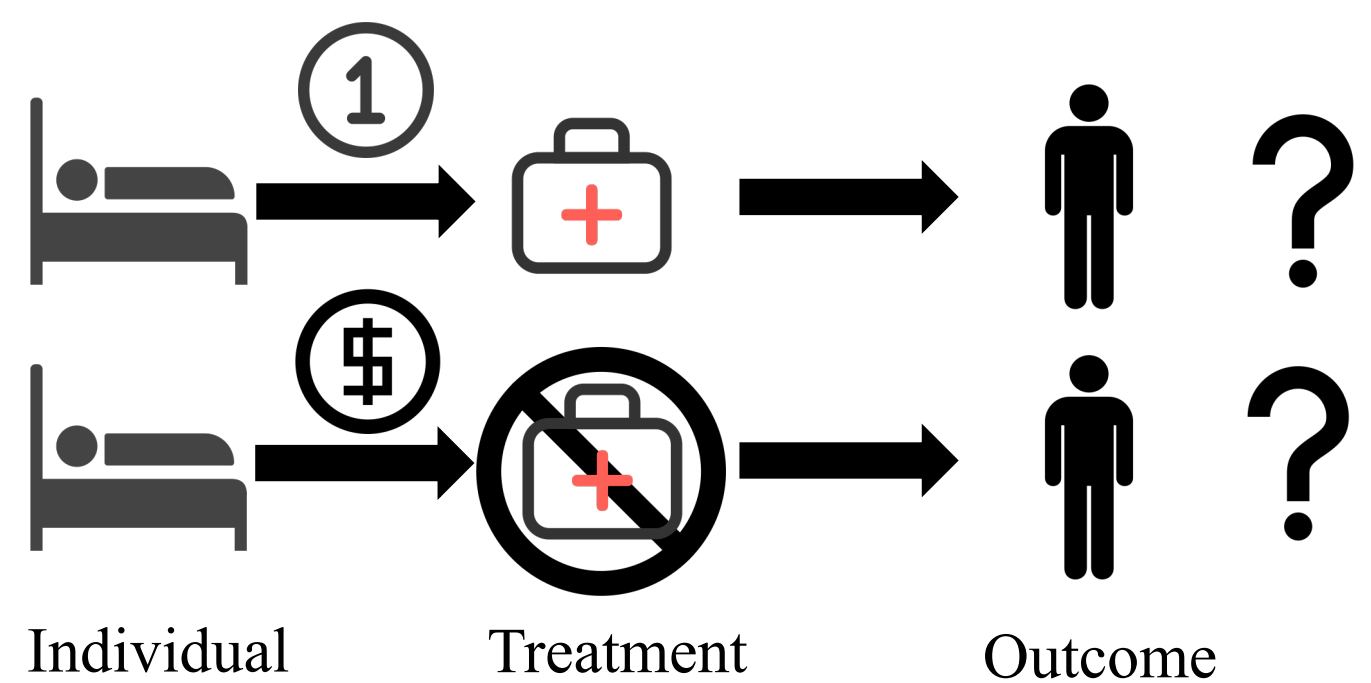
Despite the feature value, probabilities of feature value is informative for prediction.



Experiment

Task

Predict outcome in randomized trials



Dataset

Intervention	AKI Alert or Not	SCALE	NUM
Main-outcome	AKI Progression in 14 Days	Nominal	9
Pre-treatment	EHR Records	Ordinal	19
Patients Num	6030	Interval	3
		Ratio	20

Result

PR-AUC (5 Random Splits)

HetMLP (ours)	VinlliaMLP	Random
.2117±.0009	.2087±.0164	.1568±.0089

Future

1. Model Improvement
2. Text Information
3. Time-series