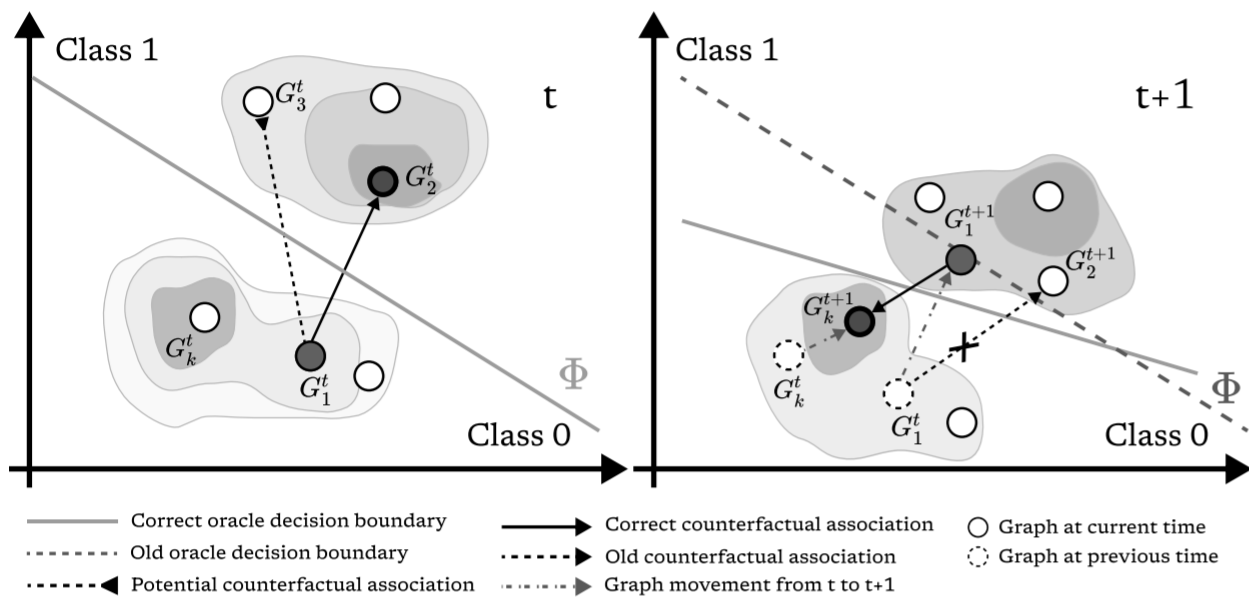


UNIFYING EVOLUTION, EXPLANATION, AND DISCERNMENT

A GENERATIVE APPROACH FOR DYNAMIC GRAPH COUNTERFACTUALS



What happens when counterfactuals get obsolete as time passes?

Bardh Prenkaj et al.
Technical University of Munich

Counterfactuals and Temporal Data.

In dynamic environments, decision boundaries change over time, leading to the invalidation of counterfactuals that were once valid.

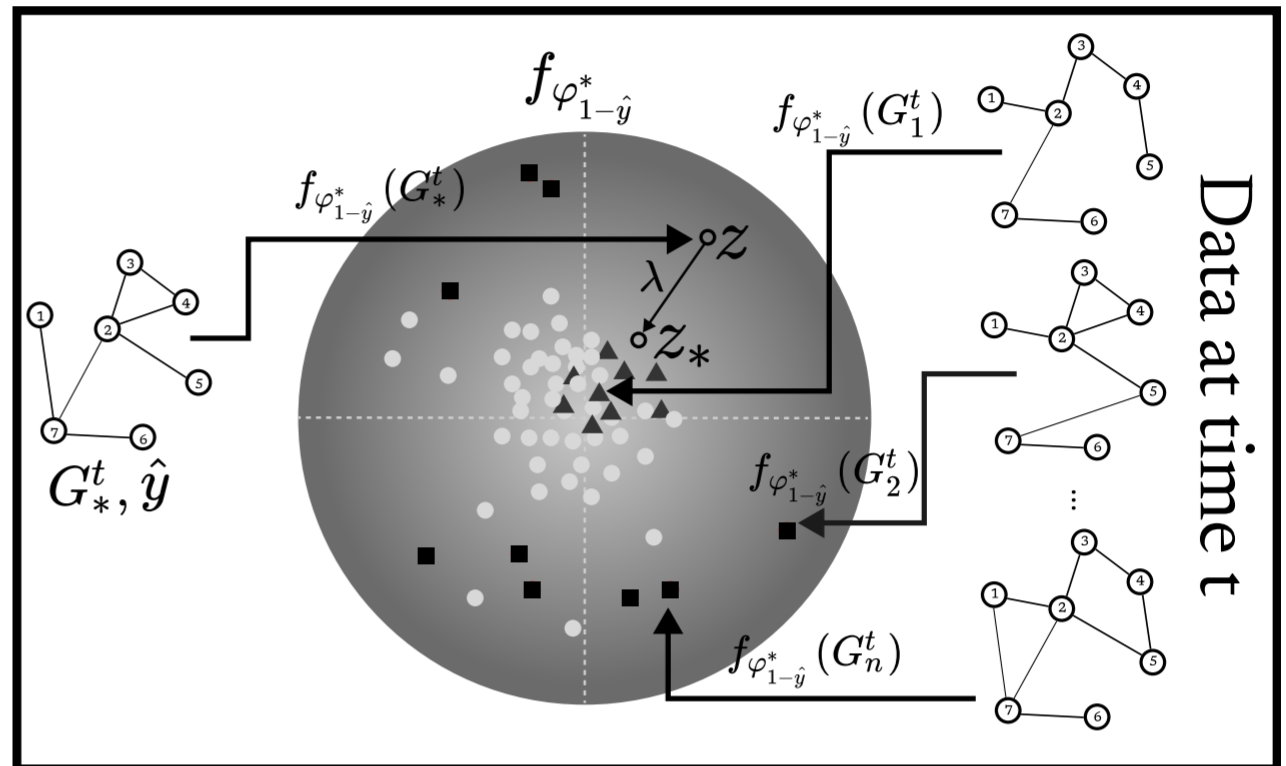
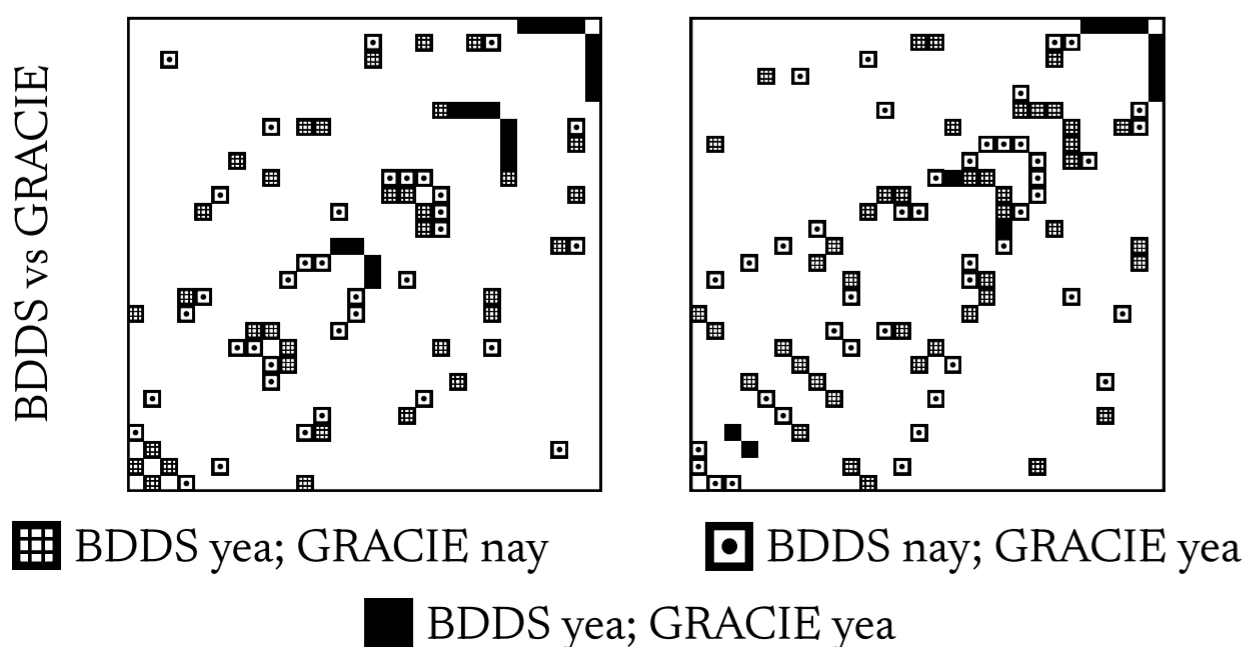
Need for Dynamic Updates.

To maintain the reliability of counterfactual explanations, it is crucial to develop mechanisms that adapt to evolving data distributions.

Ensuring Validity Over Time

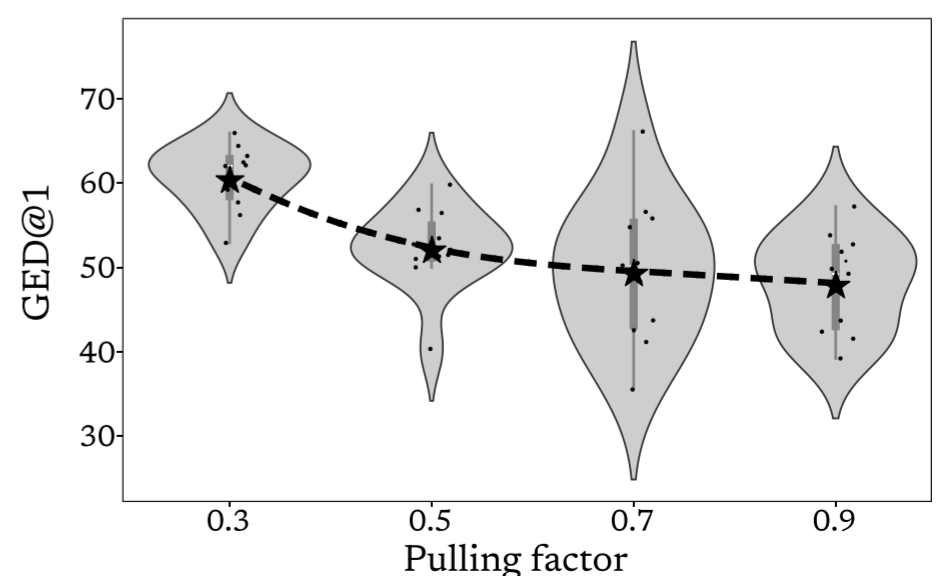
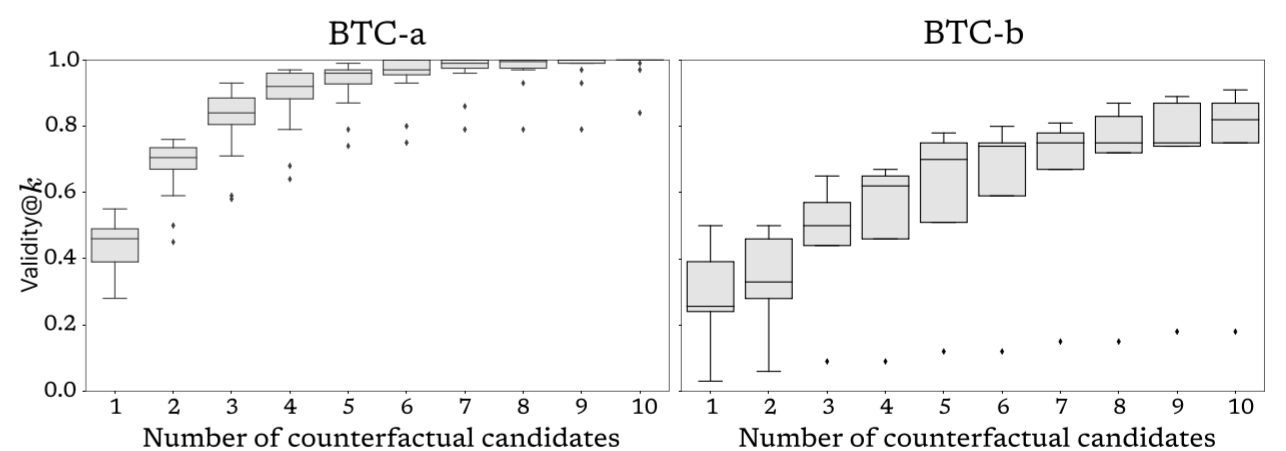
Our approach proposes a method to dynamically update counterfactuals, ensuring they remain valid even as underlying data distributions change.


GRACIE is a self-adapting dynamic model for generative classification and counterfactual generation of time graphs.



Search for top-k counterfactual candidates at inference time.

	DTC	DBLP	BTC-a	BTC-b	BNZ
BDDS	0.465	0.381	0.360*	0.235	0.136
MEG	0.250	0.209	-	0.260	0.120*
CLEAR	0.458	0.024	0.214	0.125	0.000
G-CRAN	0.507	0.256	0.236	-	0.404
DyGRACE	0.525	0.307	0.232	0.000*	0.232
GRACIE	0.600	0.442	0.440	0.284	0.441





The paper is very colorful.
Give it a chance!

