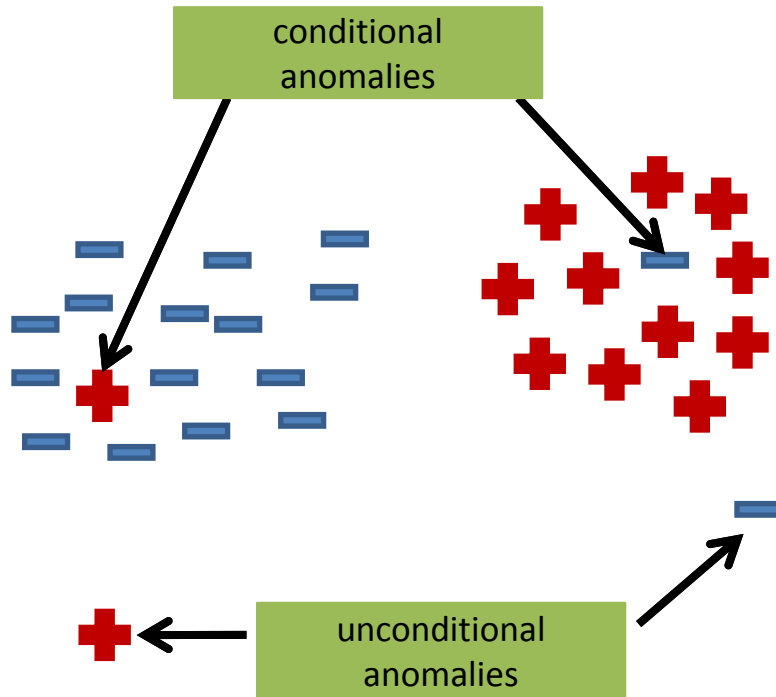


Conditional Anomaly Detection Using Soft Harmonic Functions: An Application to Clinical Alerting



- Problem: **Medical errors**
- Anomalies in **actions** (e.g. Med orders)
- Rule-based systems are costly
- Challenge: unconditional anomalies
- Estimate the **confidence** of actions
- Label propagation on data similarity graph
- Regularization to avoid overconfidence
- Results: Cardiac surgery patients (UPMC)

“Medical errors account for 200 000 preventable deaths a year.”

(HealthGrades study, Wall Street Journal, July 27th 2004)

“Medical errors are the 8-th leading cause of death in the US population”

(To Err is Human: Building a safer health system., Kohn et. al, 2000)