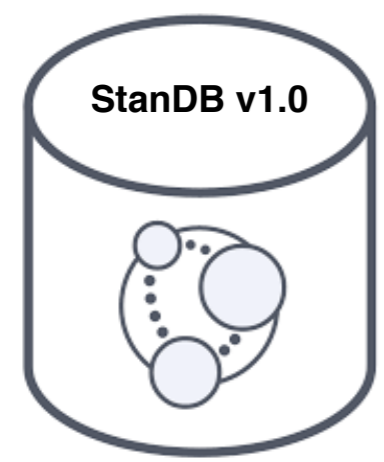


Building & Learning biological knowledge

Goal: deep learn graphDB and predict new drug indications, drug biomarkers, etc

Data overview

Extracting drug-protein-disease links by integrating 9 public DBs



Nodes
 7815 drugs
 3721 diseases
 32,373 proteins
 ...
Edges
 55,618 drug-disease
 21,877 drug-drug,
 125,686 drug-protein
 161,269 disease-protein,
 158,886 protein-protein,
 etc

Therapeutic use	# CID
Central Nervous System Agents	506
Anti-Infective Agents	344
Cardiovascular Agents	303
Antineoplastic Agents	264
Anti-Inflammatory Agents	124

Disease category	# disease
Nervous System Diseases	733
Pathological Conditions, Signs and Symptoms	616
Congenital, Hereditary, and Neonatal Diseases and Abnormalities	604
Neoplasms	463
Cardiovascular Diseases	346
Nutritional and Metabolic Diseases	311

Ongoing activities



Deep Learning StanDB

- Missing Edge prediction*
- New drug indications
- New drug targets
- New drug/disease biomarkers