

KGvec2go

Serving up-to-date Dynamic Biomedical KG Embeddings



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Integrating knowledge graphs (KGs) and ontologies with machine learning (ML) models often relies on KG embedding (KGE) models to transform graph data into numerical representations. Therefore, pre-trained KGE models for popular semantic resources are increasingly valuable, as they spare the need to retrain models for different tasks using the same data.

KGE models:

- TransE
- TransR
- DistMult
- HolE
- RDF2Vec
- BoxE

Biomedical ontologies:

- Gene Ontology (GO)
- Human Phenotype Ontology (HP)

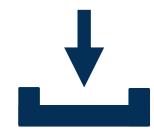
Bio-KGvec2go

is an extension of the KGvec2go Web API, designed to provide regularly updated embeddings using six KGE models for two widely used biomedical ontologies.

- Facilitates timely biomedical research
- Democratizes Al development
- Enables sustainable computing
- Facilitates the study of knowledge evolution

Functionalities

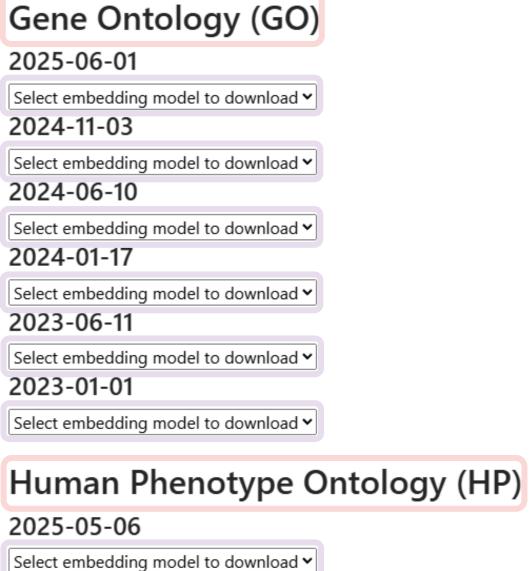
Download



- Users can download a JSON file.
- It supports the KGE downstream use and ontology evolution research.

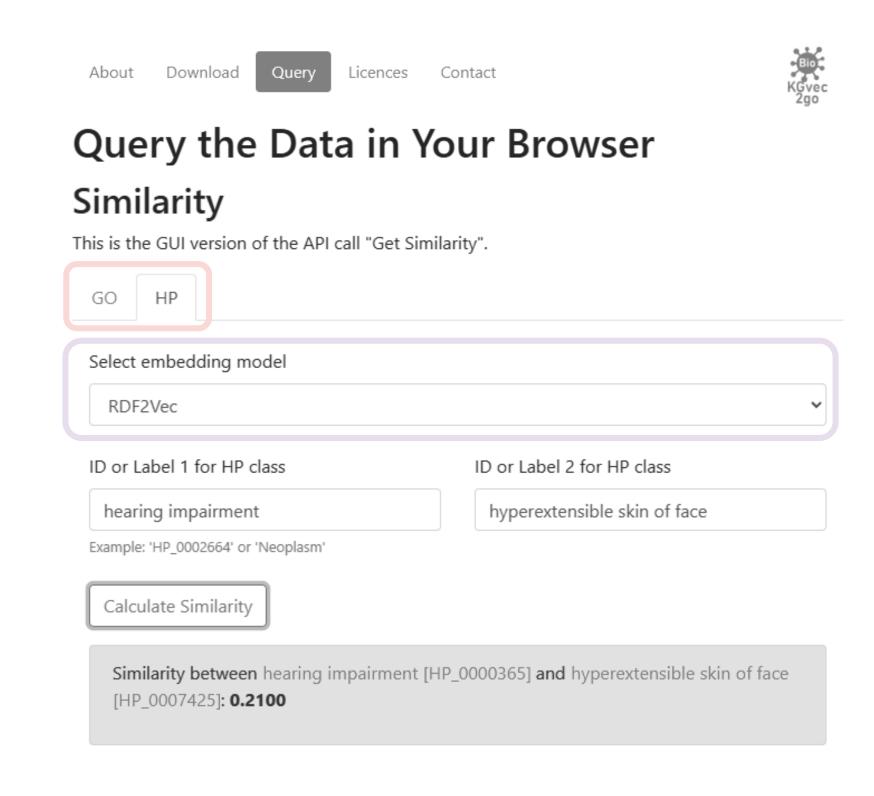
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Download the Vectors



2025-01-16 Select embedding model to download > 2024-07-01 Select embedding model to download 🗸 2024-01-16 Select embedding model to download > 2023-06-17 Select embedding model to download 🗸 2023-01-27 Select embedding model to download 🕶

- Users can access the semantic similarity between two classes.
- Useful for ontology curation and annotation.



Future work

- Introduce autocomplete for class labels and tolerance to minor typos for search functionalities
- Support additional biomedical KGs and KGE models

Top Closest Concepts_



Users can find the top 10 most semantically similar classes.

About Download Query

Well-suited for semantic search and enrichment analyses.

Query the Data in Your Browser Top 10 Closest Concepts				
This is the GUI version of the API call "N Closest Concepts".				
	GO	HP		
	Select embedding model ID or Label for class			
	RDF	F2Vec • fever		Search
		Example: 'HP_0000039' or 'Episp	adias'	
	#	Class Label	URL	Similarity Score
	1	abnormality of temperature regulation [HP_000437	'0] Link	0.7760
	2	recurrent fever [HP_0001954]	Link	0.7638
	3	malignant hyperthermia [HP_0002047]	Link	0.7195
	4	periodic fever [HP_0032323]	Link	0.7135
	5	persistent fever [HP_0033399]	Link	0.7096
	6	intermittent hypothermia [HP_0005964]	Link	0.7070
	7	non-periodic recurrent fever [HP_0032324]	Link	0.7066
	8	hyperpyrexia [HP_0033031]	Link	0.7055
	9	exercise-triggered malignant hyperthermia [HP_0034732]	Link	0.6847
	10	unexplained fevers [HP_0001955]	Link	0.6845



