



BioKGvec2go

Serving up-to-date Dynamic Biomedical KG Embeddings

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<http://www.bio.kgvec2go.org/>

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

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Download the Vectors

Gene Ontology (GO)

- 2025-06-01
- Select embedding model to download
- 2024-11-03
- Select embedding model to download
- 2024-06-10
- Select embedding model to download
- 2024-01-17
- Select embedding model to download
- 2023-06-11
- Select embedding model to download
- 2023-01-01
- Select embedding model to download

Human Phenotype Ontology (HP)

- 2025-05-06
- Select embedding model to download
- 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

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.
- Well-suited for semantic search and enrichment analyses.

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Query the Data in Your Browser

Top 10 Closest Concepts

This is the GUI version of the API call "N Closest Concepts".

#	Class Label	URL	Similarity Score
1	abnormality of temperature regulation [HP_0004370]	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_003399]	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

Query the Data in Your Browser

Similarity

This is the GUI version of the API call "Get Similarity".

GO HP

Select embedding model
 RDF2Vec

ID or Label 1 for HP class
hearing impairment
ID or Label 2 for HP class
hyperextensible skin of face

Example: 'HP_0002664' or 'Neoplasm'
 Calculate Similarity

Similarity between hearing impairment [HP_0000365] and hyperextensible skin of face [HP_0007425]: 0.2100