Graph Neural Network

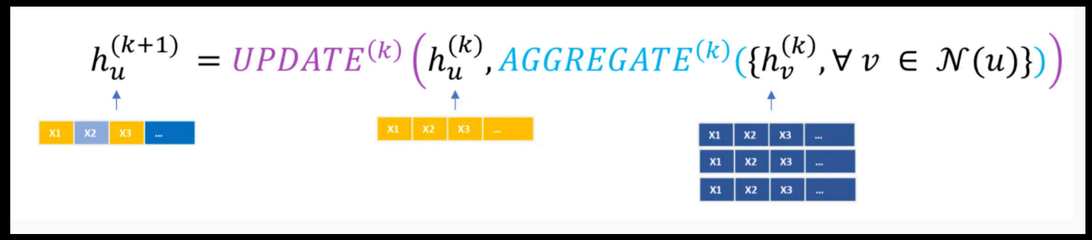
Einführung in GNNs

Tin Votan, 16. März 2021

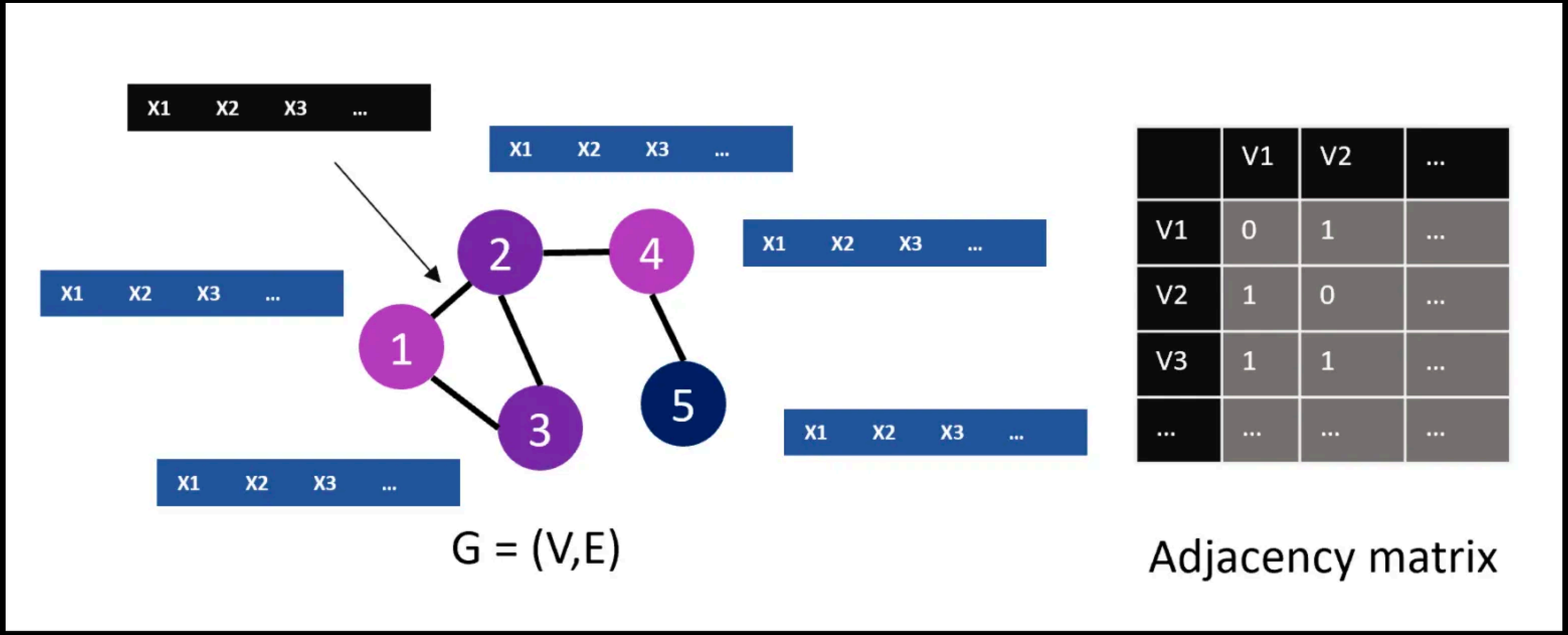
Einführung

Blabla …

- Graph neural networks (GNNs) are proposed to combine the feature information and the graph structure to learn better representations on graphs via feature propagation and aggregation. Due to its convincing performance and high interpretability, GNN has recently become a widely applied graph analysis tool.
- Graph neural networks (GNNs) are deep learning-based methods that operate on graph domain. Due to its convincing performance and high interpretability, GNN has been a widely applied graph analy- sis method recently.
- Formel:

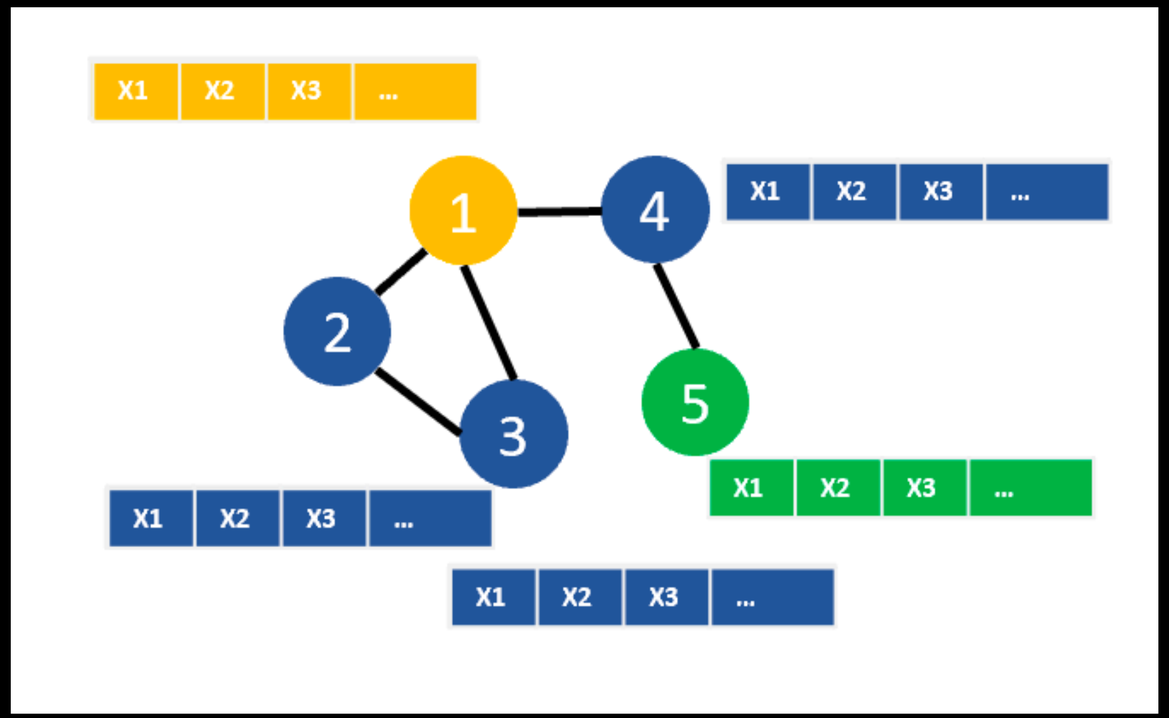


Einführung
Ein einfacher Graph



(Quelle: deepfindr.com)

Einführung
Nodes und Features



3 Verbindungen

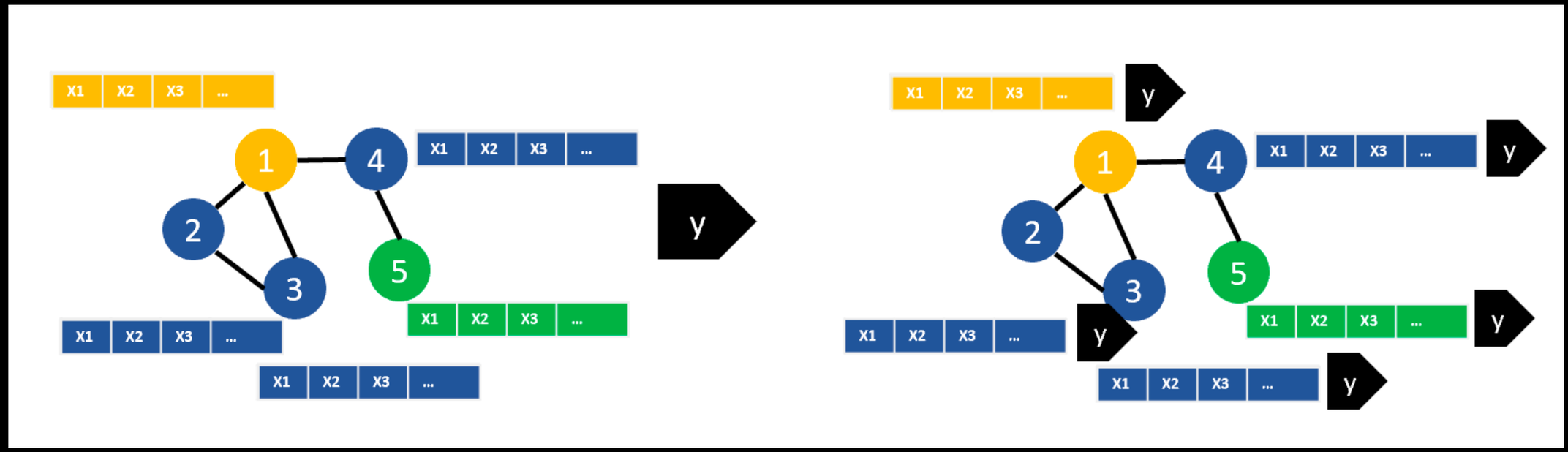
2 Verbindungen

2 Verbindungen

(Quelle: deepfindr.com)

Einführung

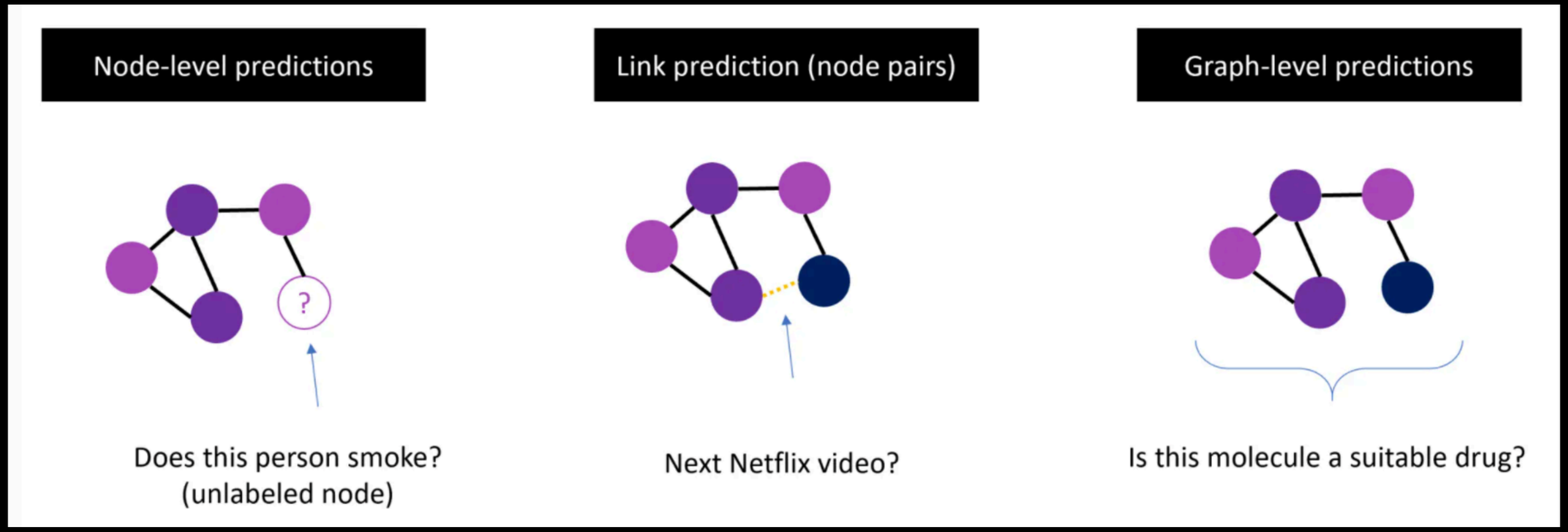
Nodes und Features



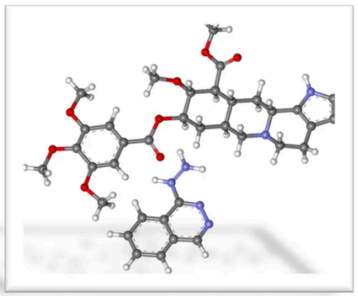
(Quelle: deepfindr.com)

Einführung

Beispiele zur Interpretation:



Einführung
Einsatz in …



Medicine / Pharmacy

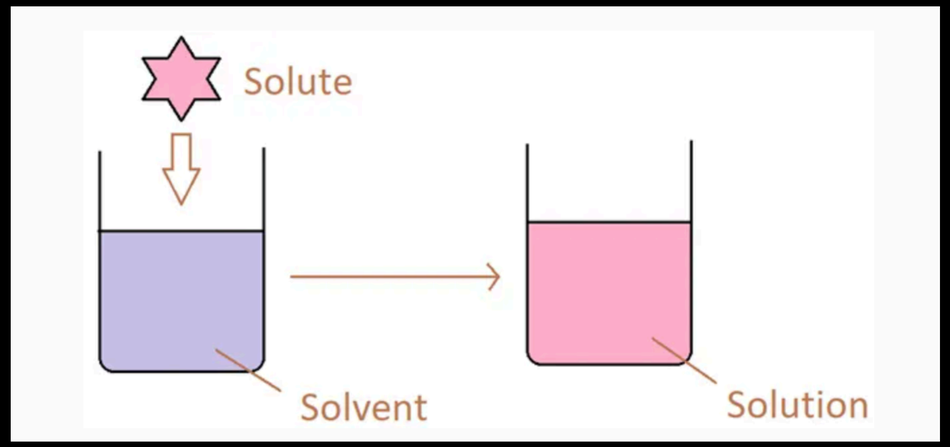
Recommender Systems

Social Networks

3D Games / Meshes

PyTorch Geometric

Kurz gesagt …



“Unsere Machine Learning Aufgabe ist es vorherzusagen, wie sich verschiedene Moleküle in Wasser auflösen.”

Links

- https://github.com/thunlp/GNNPapers
- Introduction to Graph Neural Networks (https://doi.org/10.2200/S00980ED1V01Y202001AIM045)
- https://youtu.be/fOctJB4kVlM
- https://pytorch-geometric.readthedocs.io/en/latest/index.html
- https://medium.com/@sunitachoudhary103/generating-molecules-using-a-char-rnn-in-pytorch-16885fd9394b
- https://deepfindr.com/understanding-graph-neural-networks-part-1-3/