From notes to models:

Leveraging LLMs for museum closure data

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https://mapping-museums.bbk.ac.uk/

- Our collaborators have collected heterogeneous notes describing the **closure of ~500 UK museums** between 2000-2025.
- Over the last two years, we have **manually modelled** the semantics of notes regarding museum **collection dispersal** as a graph database.
- We now seek to leverage **LLMs to automate the modelling** of notes regarding **buildings and reasons for closure**.

Notes on museum buildings:

"The Connections Discovery Centre actually closed in 2000, though the building was retained by RAMM as the collection store for the costume collection which was previously displayed in the building as the 'Rougemont House Costume Museum' … were moved to our new store before the building was sold. It became Exeter Mathematics School"

"Roof caved ca. 2020-2021, so no public access since then. Temporary roof installed in 2022-2023, looking for funding"

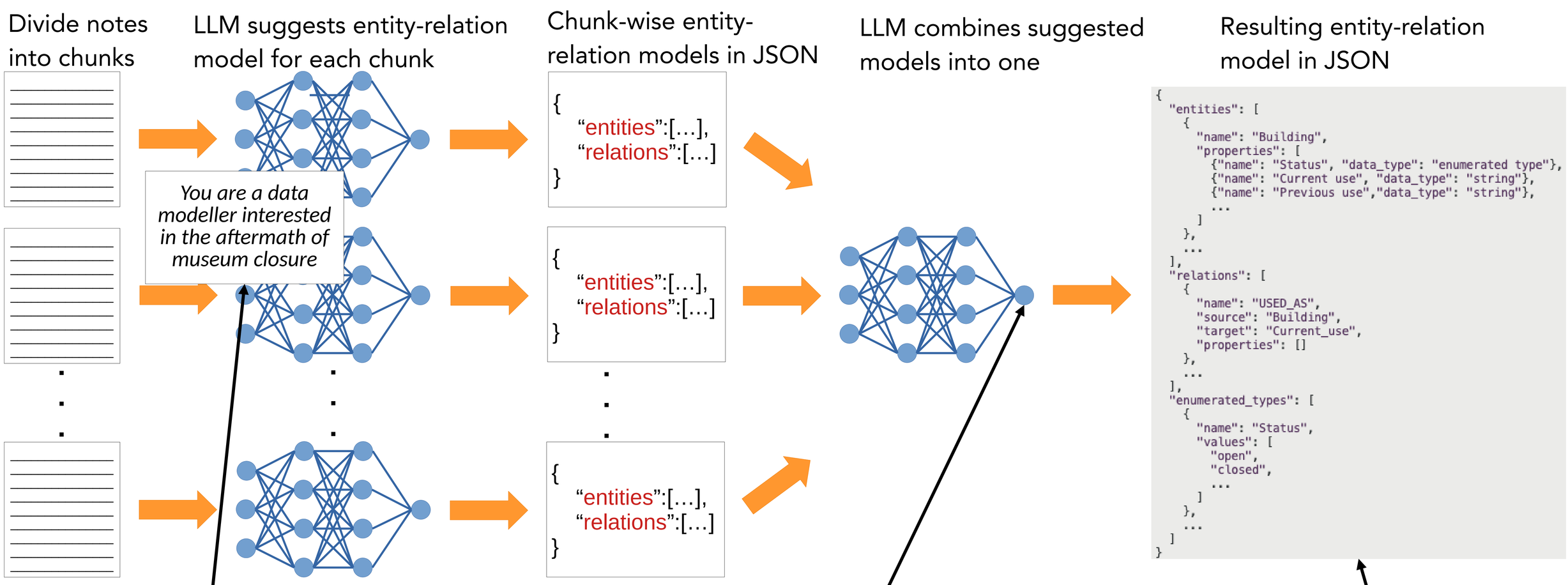
"Hotel was sold and remains a hotel"

Notes describe:

- New use of buildings post-closure
- Damage and demolition
- Major alterations to buildings
- New owners or tenants

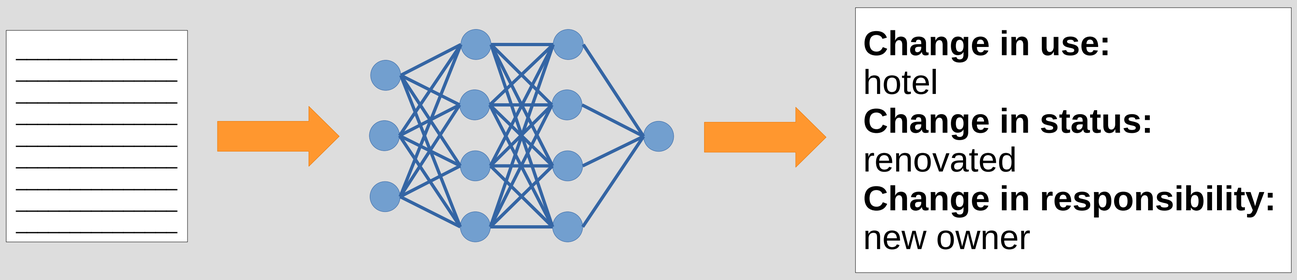
Can an LLM invent a new data model?

We set Llama 3.1 8B the task of generating a new set of entities and relations to model the semantics of building notes.
We had no existing data model with which to train or evaluate the LLM.



A classification based approach:

We have recently adopted a simpler approach, asking the LLM to generate labels to classify each note.
LLMs classify notes along the dimensions of **change in use**, **change in status**, and **change in responsibility**.



Future work: building a taxonomy

We are now exploring methods to automate the generation of a taxonomy. Methods to consider:

- Asking a decoder LLM to group up similar labels
- Hierarchical clustering of label embeddings

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