



GLOBAL ENERGY STORAGE DATABASE (GESDB): DATABASE UPDATES AND BACKEND FEATURES

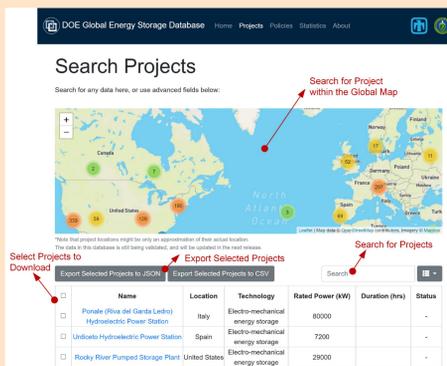
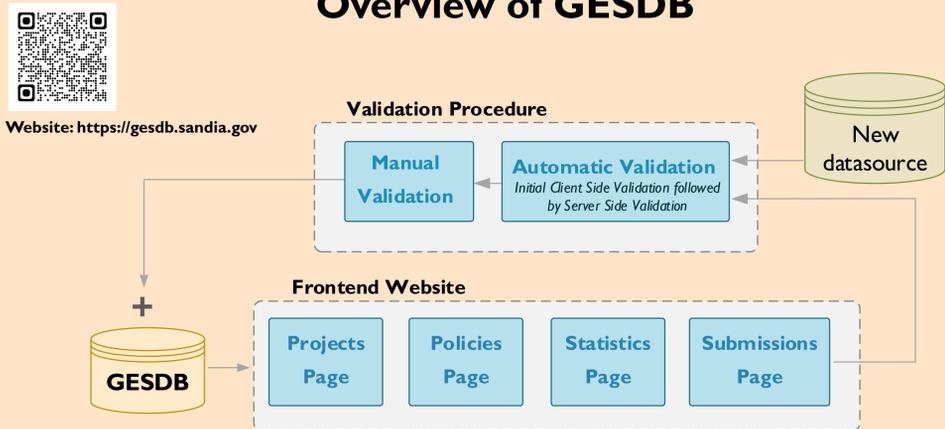
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Abstract

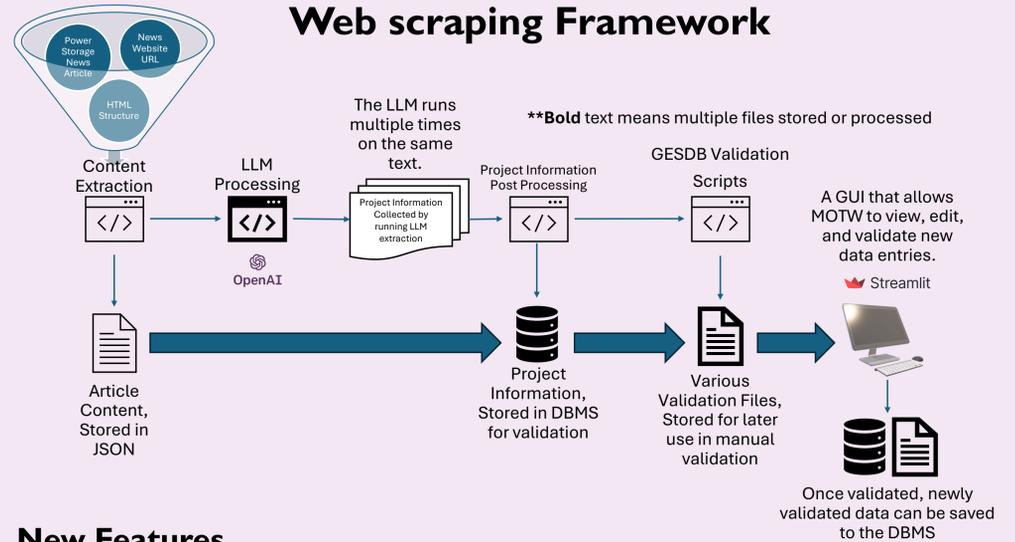
The Global Energy Storage Database (GESDB) aims at providing high-quality and accurate data on energy storage projects around the globe. In this poster, we present an overview of all the features of the GESDB including recent updates to the database. The poster also highlights some backend features being developed to automate data entries into the GESDB.

Overview of GESDB



- **Project Page-** Users can navigate, search, and download a particular project or a set of projects
 - 2300 projects → >90 GW of energy storage projects worldwide
- **Policies Page-** Relevant federal and state policy documents
- **Statistics Page-** Interactive statistics and visualizations
- **Submissions Page-** Allows users to submit new data to the GESDB

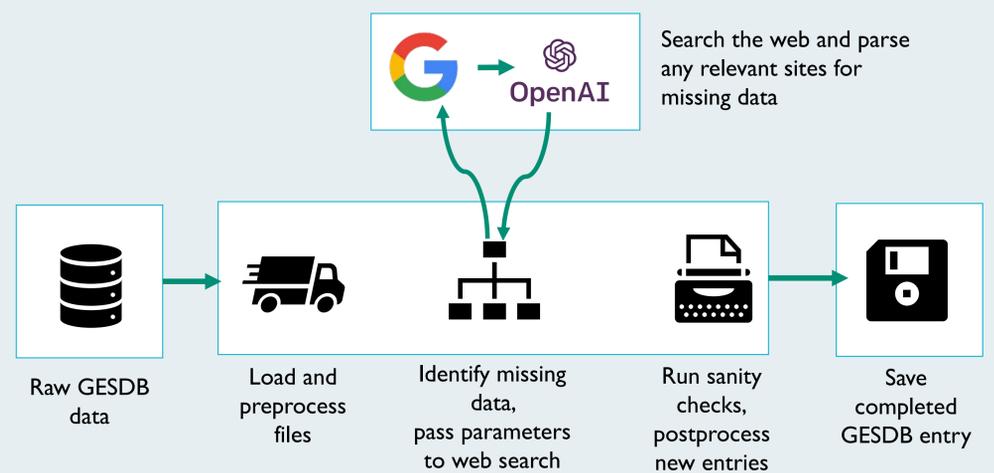
Web scraping Framework



New Features

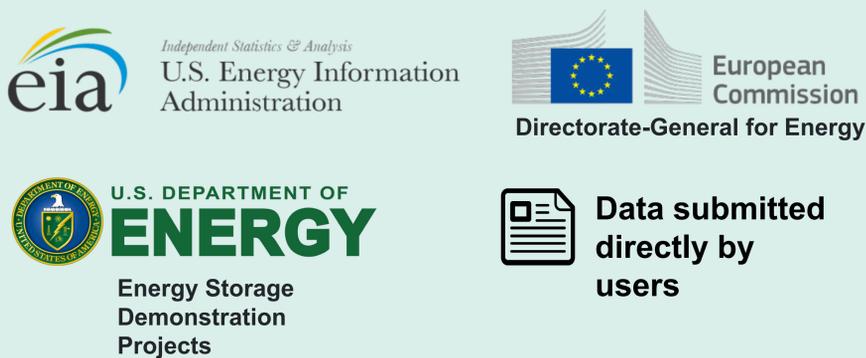
- Can perform *targeted* web page extraction scans or full site scans.
- Handle *diverse* formats with *minimal* reconfiguration through LLM capabilities
- Iterate on the input to refine edge cases or ambiguous items
- Provides detailed record views categorized by the subsections of the data defined in the LLM processor.
- Enforcing strict data schemas.
- Displays validation errors to guide admin review and corrections.

LLM for Populating Missing Data in GESDB



- **Purpose:** Automatically populate missing/null GESDB fields with an LLM-driven pipeline.
- **Engine:** It fans out to third-party search/APIs and lets the LLM extract the exact field values automatically.
- **Scale & Speed:** Many missing and null values can be filled quickly while cutting manual errors.
- **Coverage & Precision:** Not tied to one site. Value-targeted searches across many sources yield more precise results.

Current Data Sources



- Several new data sources now incorporated into GESDB
- **About 600 entries added / supplemented**
- Team has transitioned into a formal Database Management Systems using MongoDB
 - More efficient data management and enhance data integrity

Future Work

- Deploy web-scraping tool and start incorporating data into GESDB
- Continue to incorporate new data sources and update existing sources
- Deploy a chat-bot experience to automate data extraction and visualization