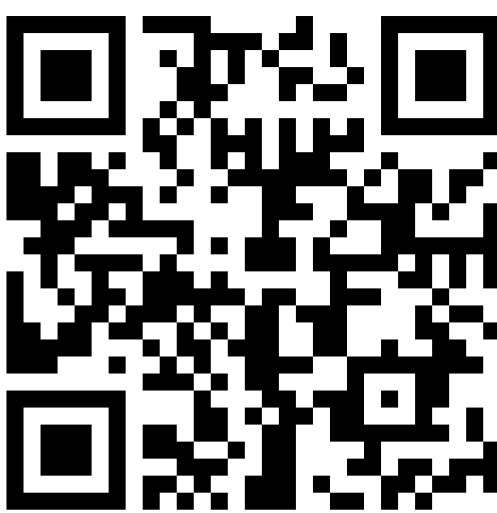


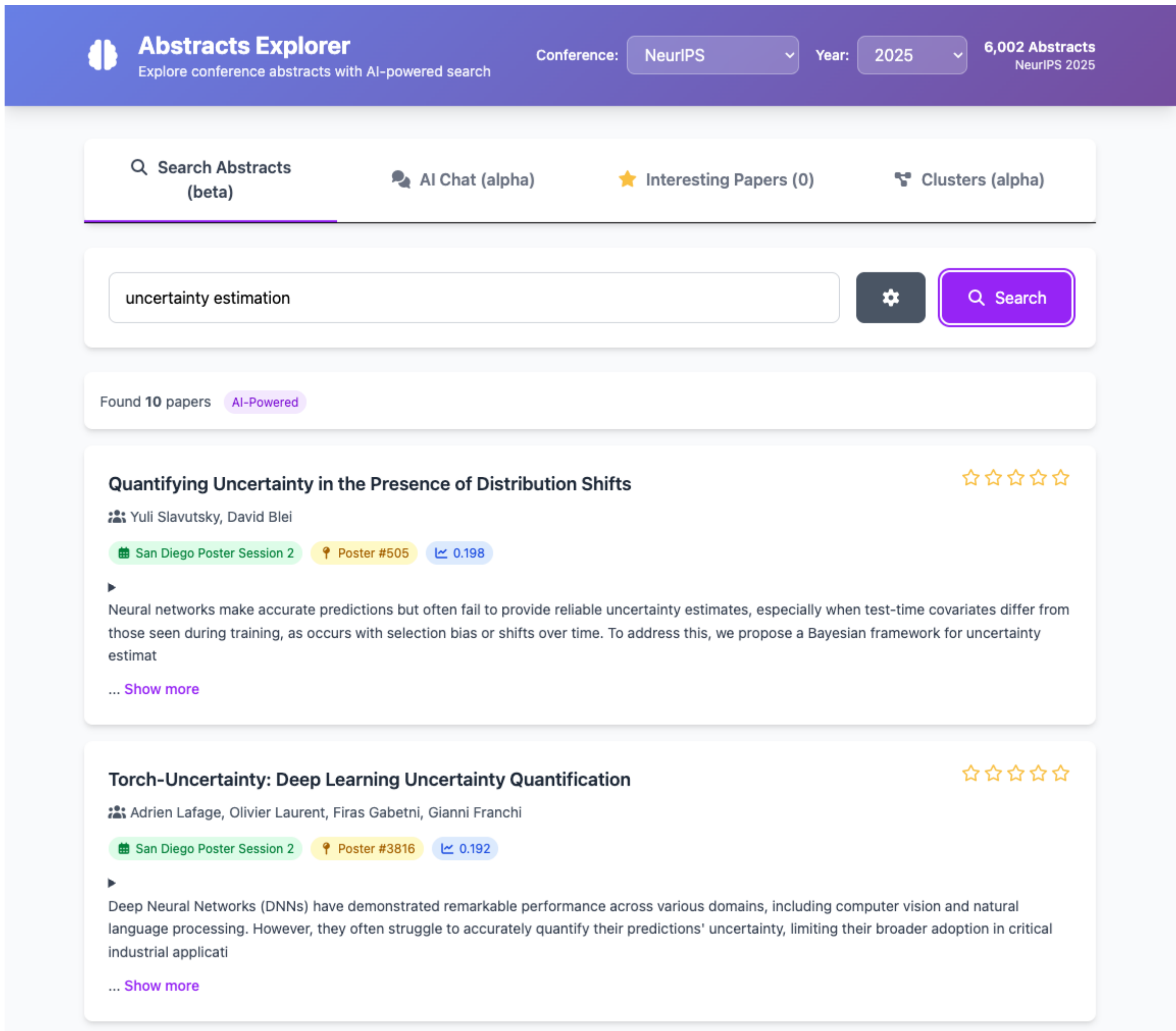
# Abstracts-Explorer: Navigating Conferences with Semantic Search and Retriever Augmented Generation



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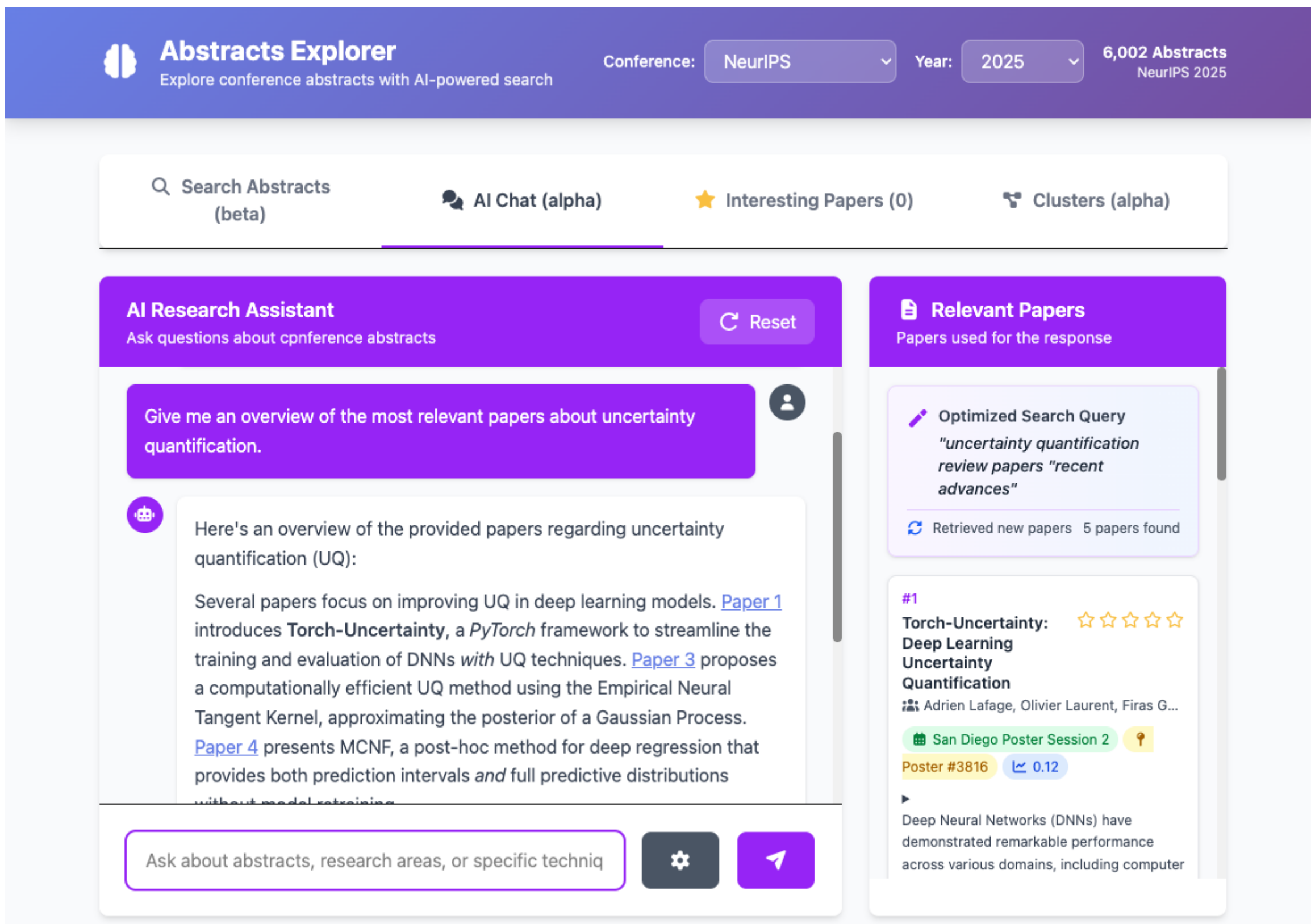


## SEMANTIC SEARCH



Download conference abstracts and search them with LLM-based semantic search.

## RETRIEVER AUGMENTED GENERATION

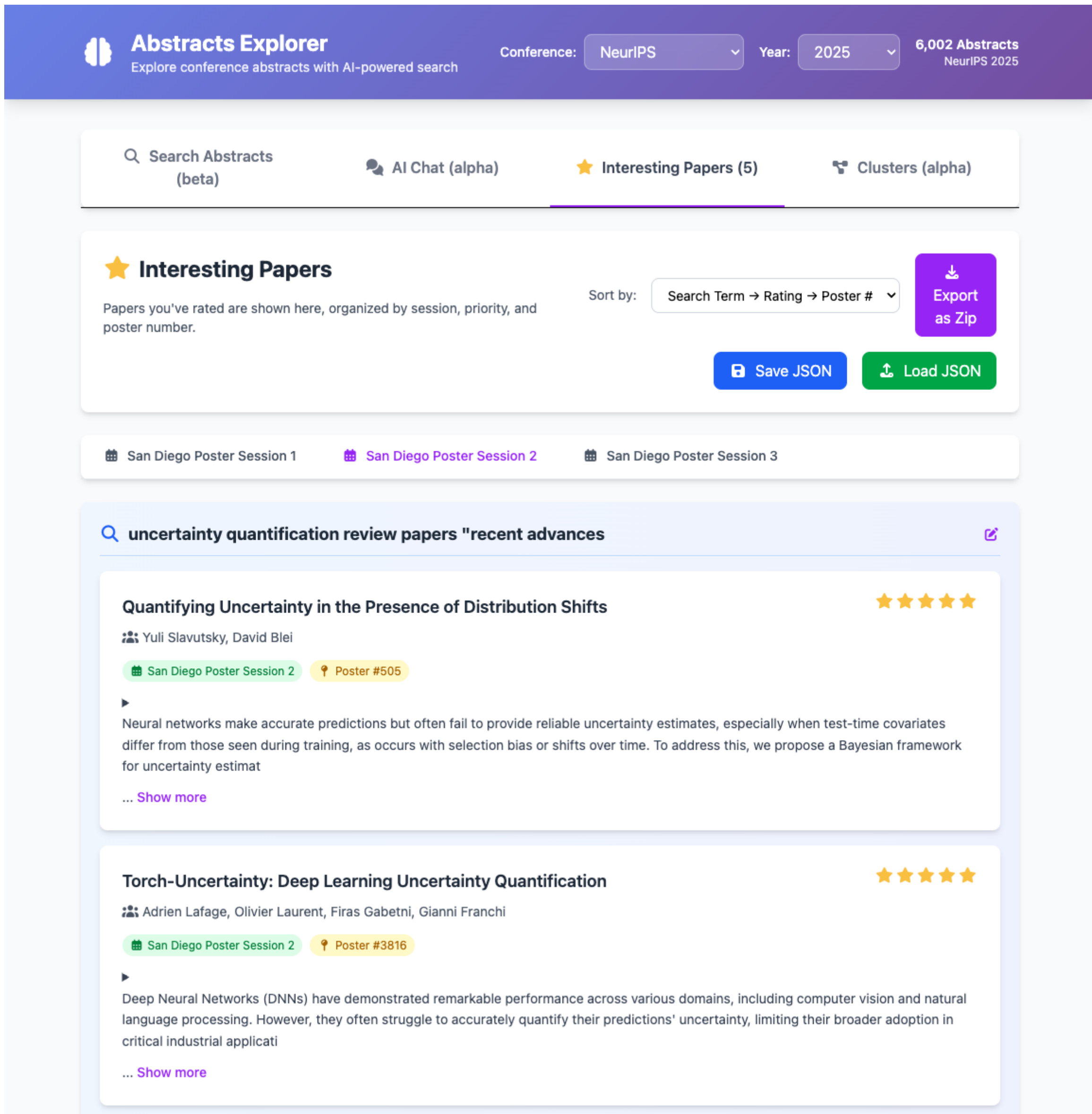


**Example Chat**  
(Paper 1 to 5 are shown next to the chat):

Q: Give me an overview of the most relevant papers about uncertainty quantification.

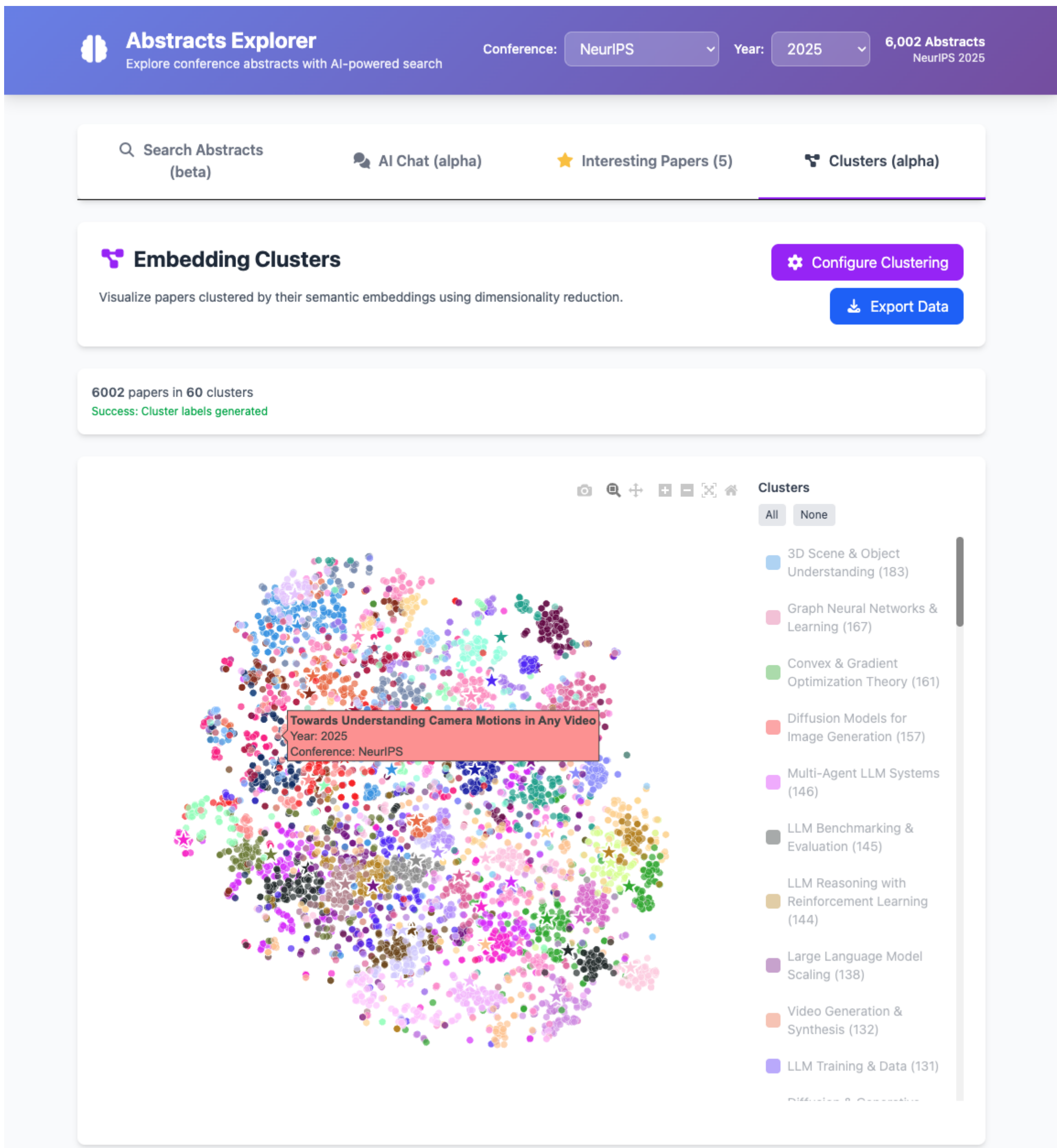
A: Several papers focus on improving UQ in deep learning models. Paper 1 introduces Torch-Uncertainty, a PyTorch framework to streamline the training and evaluation of DNNs with UQ techniques. Paper 3 proposes a computationally efficient UQ method using the Empirical Neural Tangent Kernel, approximating the posterior of a Gaussian Process. Paper 4 presents MCNF, a post-hoc method for deep regression that provides both prediction intervals and full predictive distributions without model retraining. Beyond standard deep learning, Paper 5 addresses UQ specifically for Physics-Informed Neural Networks (PINNs) using Extended Fiducial Inference (EFI), offering a way to build confidence sets without needing prior information. Finally, Paper 2 tackles UQ in the context of adaptively collected data (e.g., from reinforcement learning), proving asymptotic equivalence between Bayesian UQ and frequentist methods under certain conditions.

## INTERESTING PAPERS



Interesting papers can be exported as a collection of markdown files for future analysis

## CLUSTERING ANALYSIS



An interactive clustering map gives an overview of the topics that were presented at the conference.

### Features

- Download conference data from various sources (NeurIPS, ICLR, ICML, ML4PS)
- Store data in SQL database (SQLite or PostgreSQL) with efficient indexing
- Search papers by keywords, track, and other attributes
- Generate text embeddings for semantic search
- Find similar papers using AI-powered semantic similarity
- Interactive RAG chat to ask questions about papers
- NEW:** Cluster and visualize paper embeddings with interactive plots
- Web interface for browsing and searching papers
- NEW:** MCP server for LLM-based cluster analysis
- NEW:** Multi-database backend support (SQLite and PostgreSQL)
- Environment-based configuration with .env file support