School of Electrical Engineering and Computer Science

CS 362 Software Engineering II (Winter 2025)

FutureFrame: AI-Driven Assistance for Human-Design Consulting

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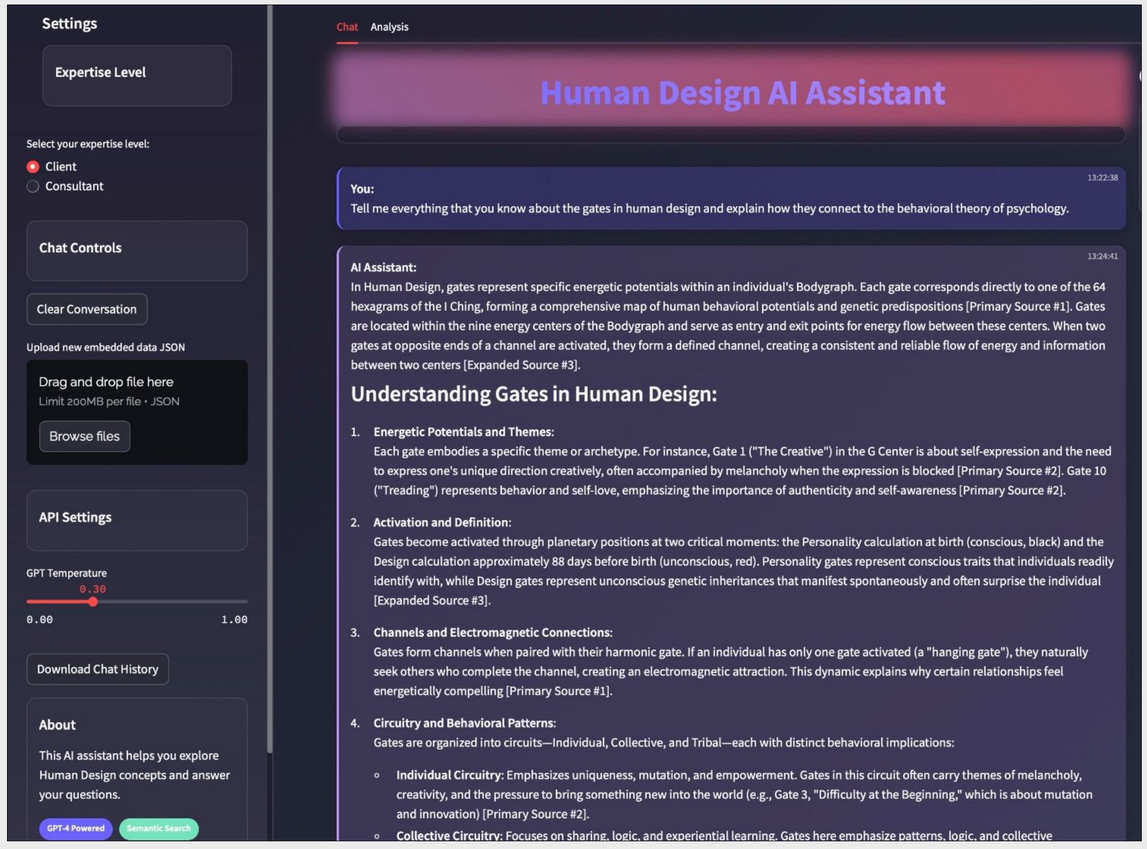
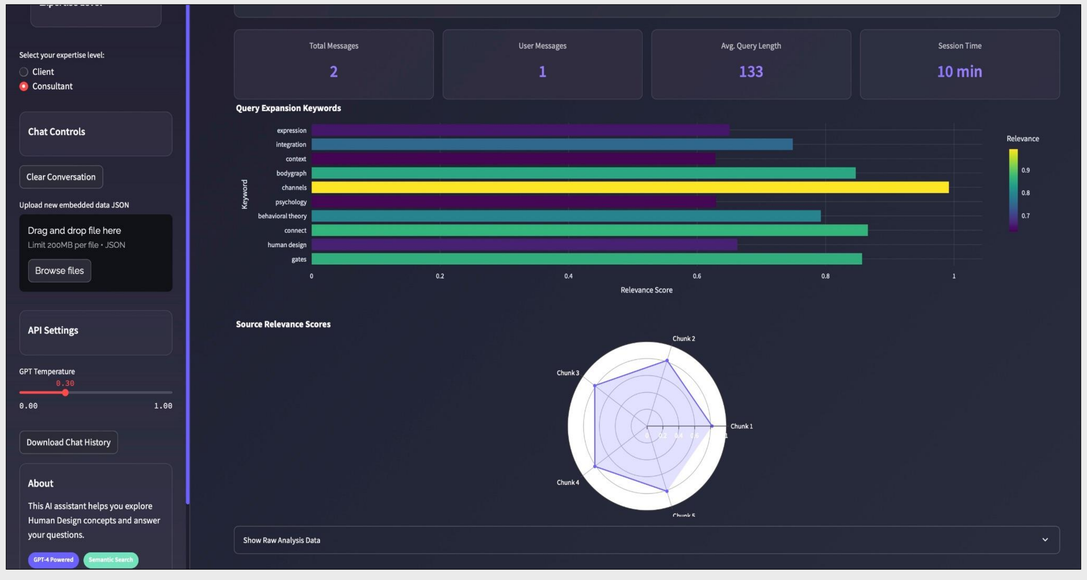
Abstract

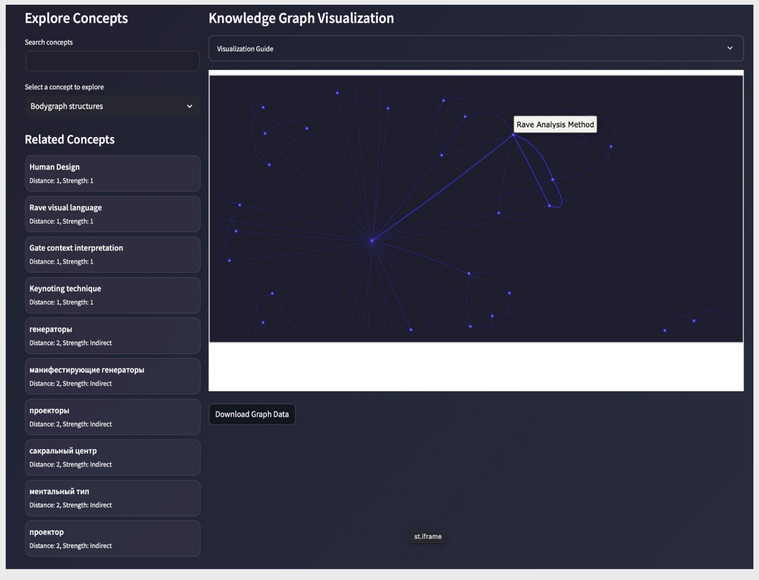
Human Design can be challenging to study due to scattered resources and jargon-heavy materials. Our chatbot addresses this gap by consolidating a wide range of Human Design texts, lectures, and transcripts into one interactive system. It uses an AI-driven retrieval process to find the most relevant answers, then presents them in clear language with direct citations. By streamlining access to verified information, the tool significantly reduces the confusion and time spent searching multiple sources. Users benefit from a trustworthy, comprehensive guide that not only covers core Human Design concepts but also integrates insights from psychology and therapy, enhancing personal growth..

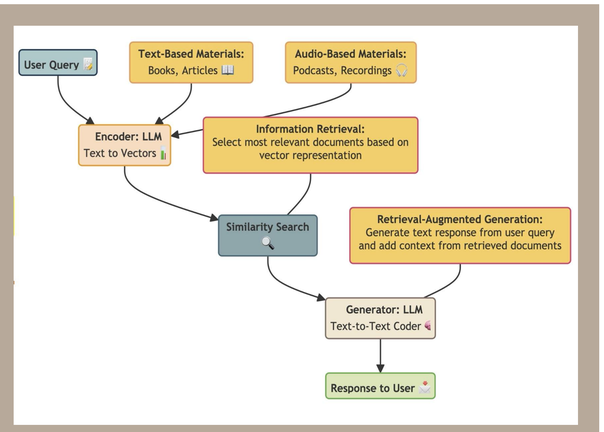
FutureFrame Features

- **Dual Interaction Modes**: A simpler “Client” flow versus a more advanced “Consultant” flow with two-stage retrieval and keyword-based query expansion.
- **Analysis Tab**: Offers in-depth visualizations (radar charts and bar graphs) of top chunks and extracted keywords, enabling consultants to see how the system arrived at its answers and revealing deeper insights into query relevance.
- **Knowledge Graph**: Dynamic graph-building (using PyVis + NetworkX) that extracts key concepts from chunks, shows relationships, and allows interactive exploration
- **PDF Reporting**: Chat transcripts, source excerpts, and highlighted keywords are compiled into a well-formatted PDF for review and record-keeping.

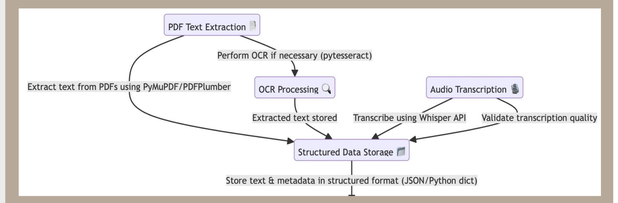




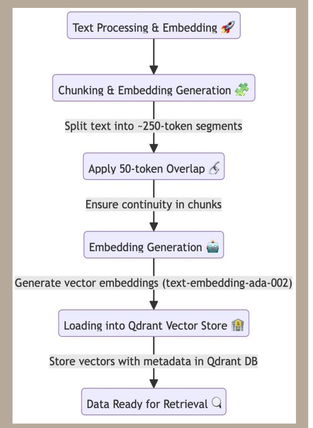




- We unified a diverse set of Human Design texts, lecture transcripts, and audio recordings into one standardized corpus.



- We transcribed any audio materials into text, then cleaned and segmented the overall dataset into manageable chunks.
- We generated embeddings for each chunk with text-embedding-ada-002, capturing semantic meaning at a fine-grained level.
- We stored these vectors in a vector database, tying each to metadata like source and page references.



- When a user posed a query, we retrieved the most relevant chunks from the database and passed them to GPT-4 for a synthesized, source-cited response.

Please visit our GitHub page at following QR code for more details and performance test reports

Oregon State University