

MICHIGAN STATE
UNIVERSITY

Alpha Presentation

LLM 3D Model Interpretation and Decomposition

The Capstone Experience

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*From Students...
...to Professionals*

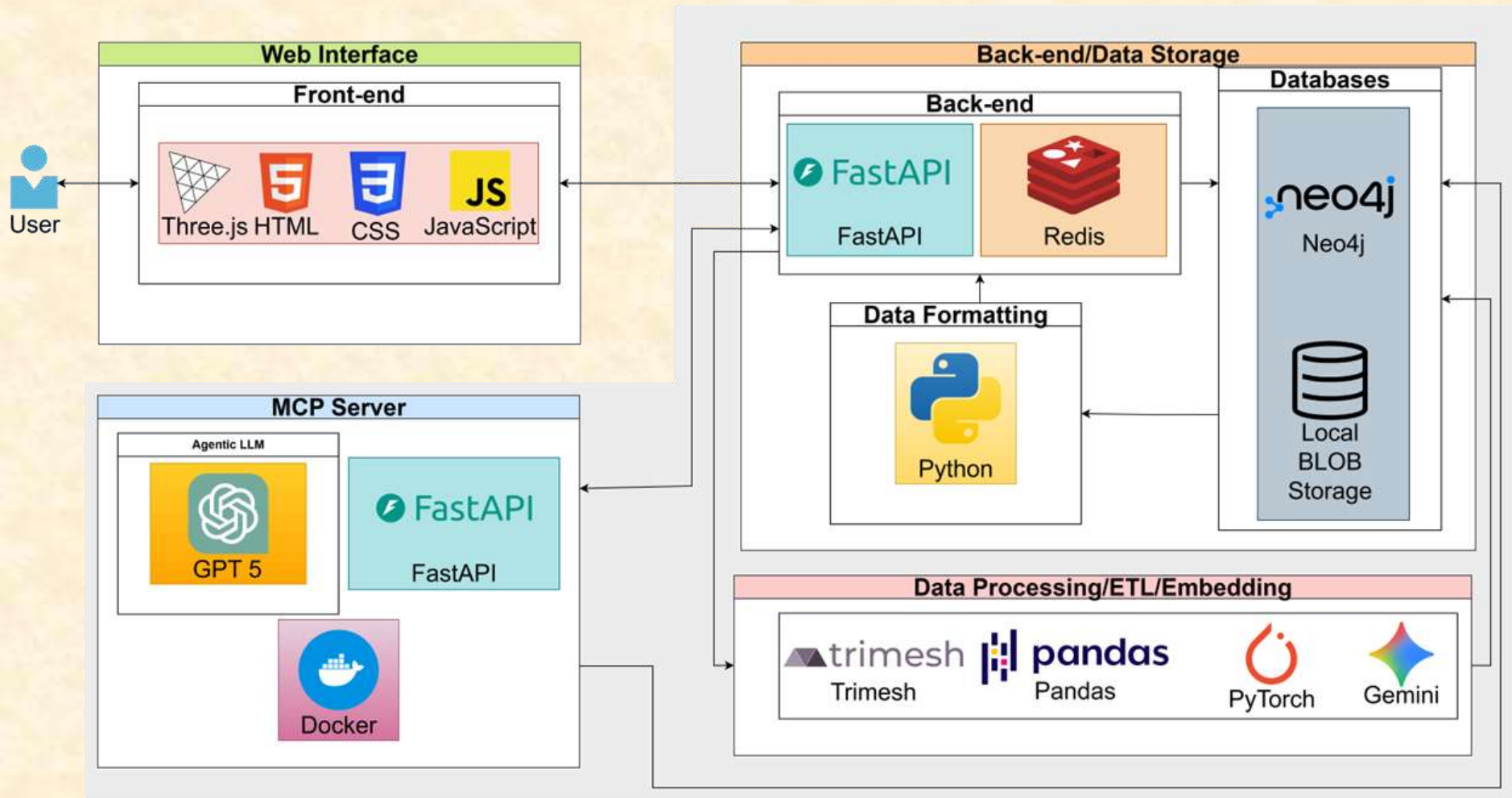
Fall 2025

Project Overview

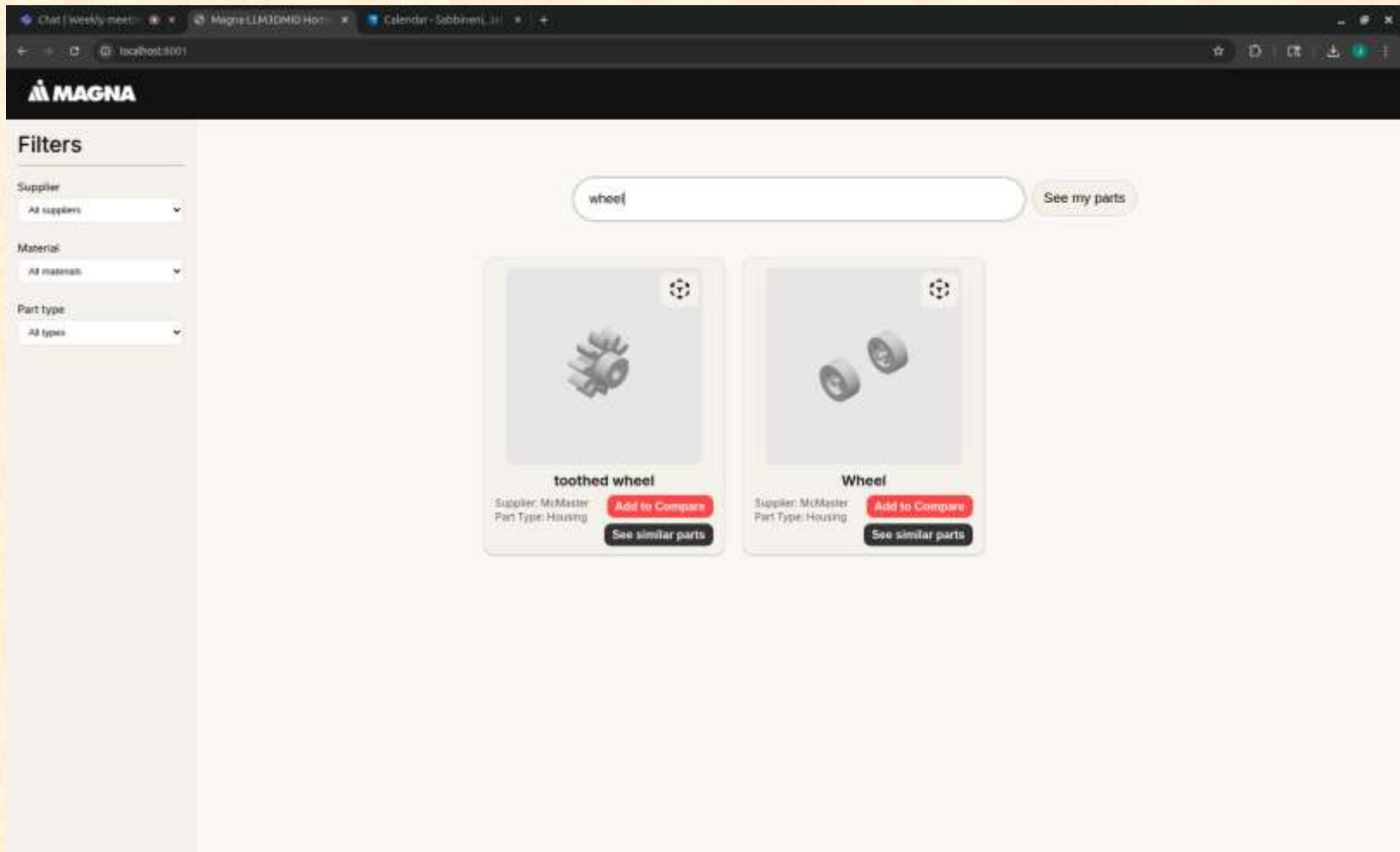
- Web app that helps engineers find and compare similar parts via their 3D models
- Supports plain-English search to locate relevant parts fast
- Lets users view and compare parts side-by-side in 3D and by metadata
- Built for Magna's engineering teams to speed up comparisons across part variants



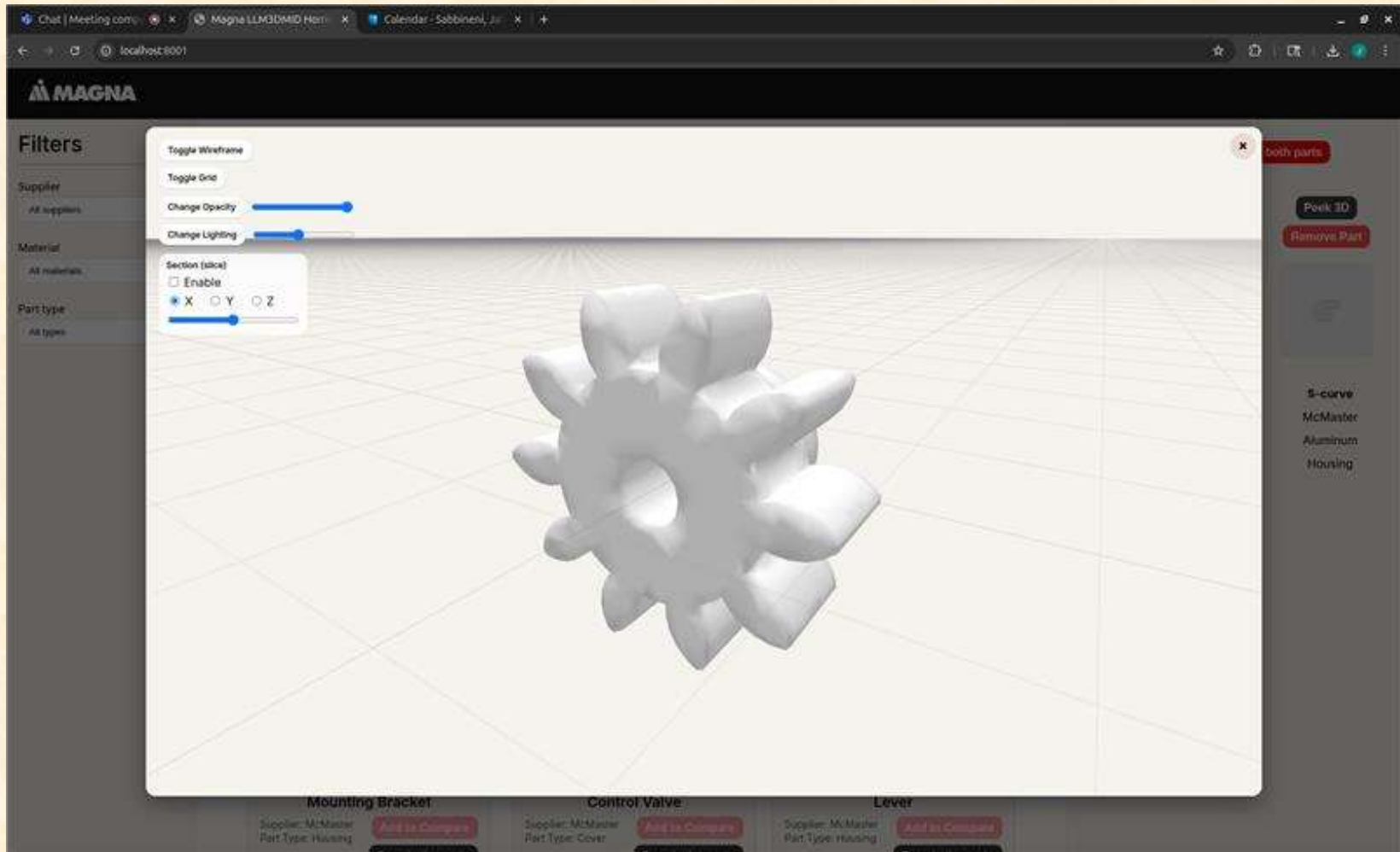
System Architecture



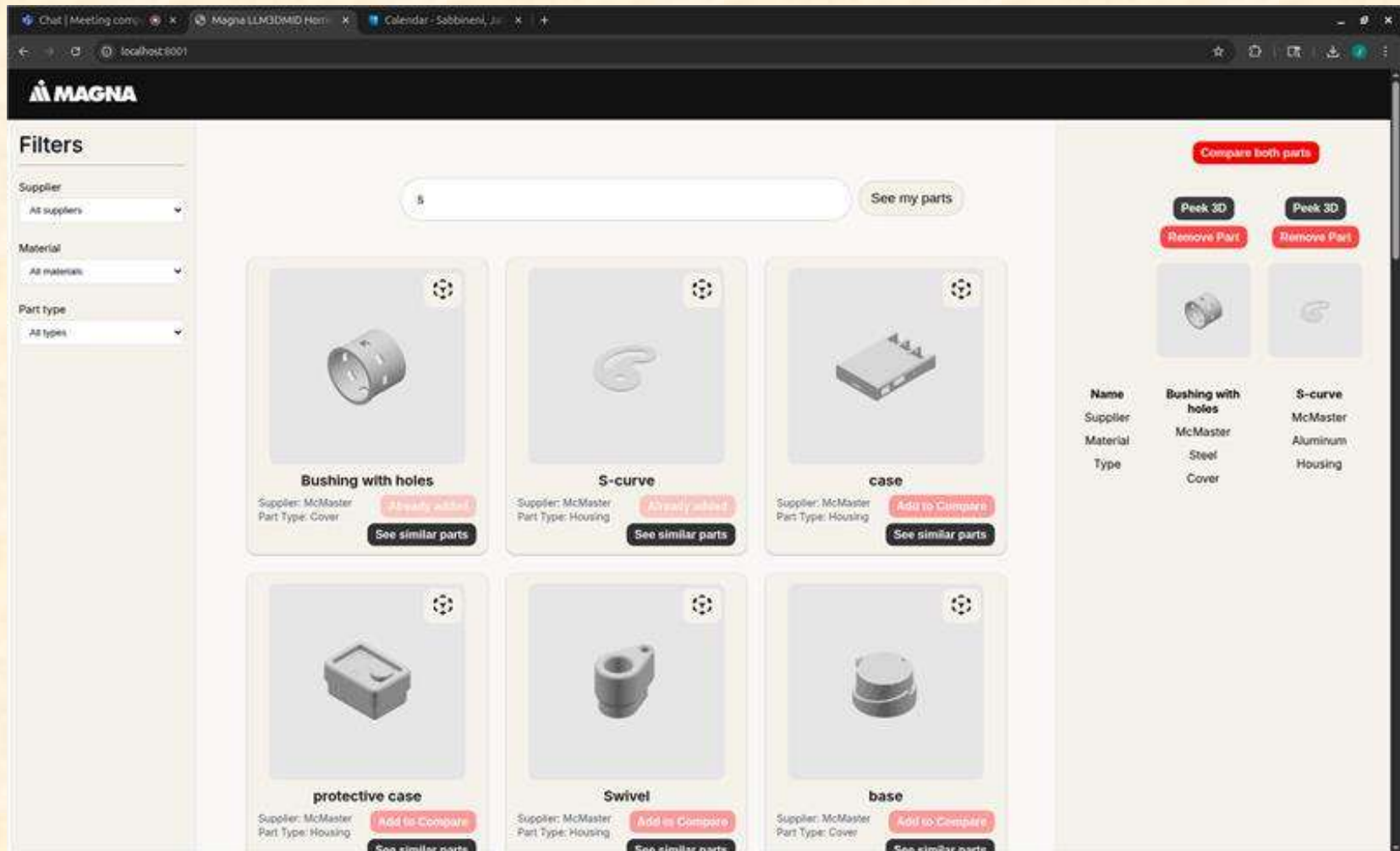
Part Search



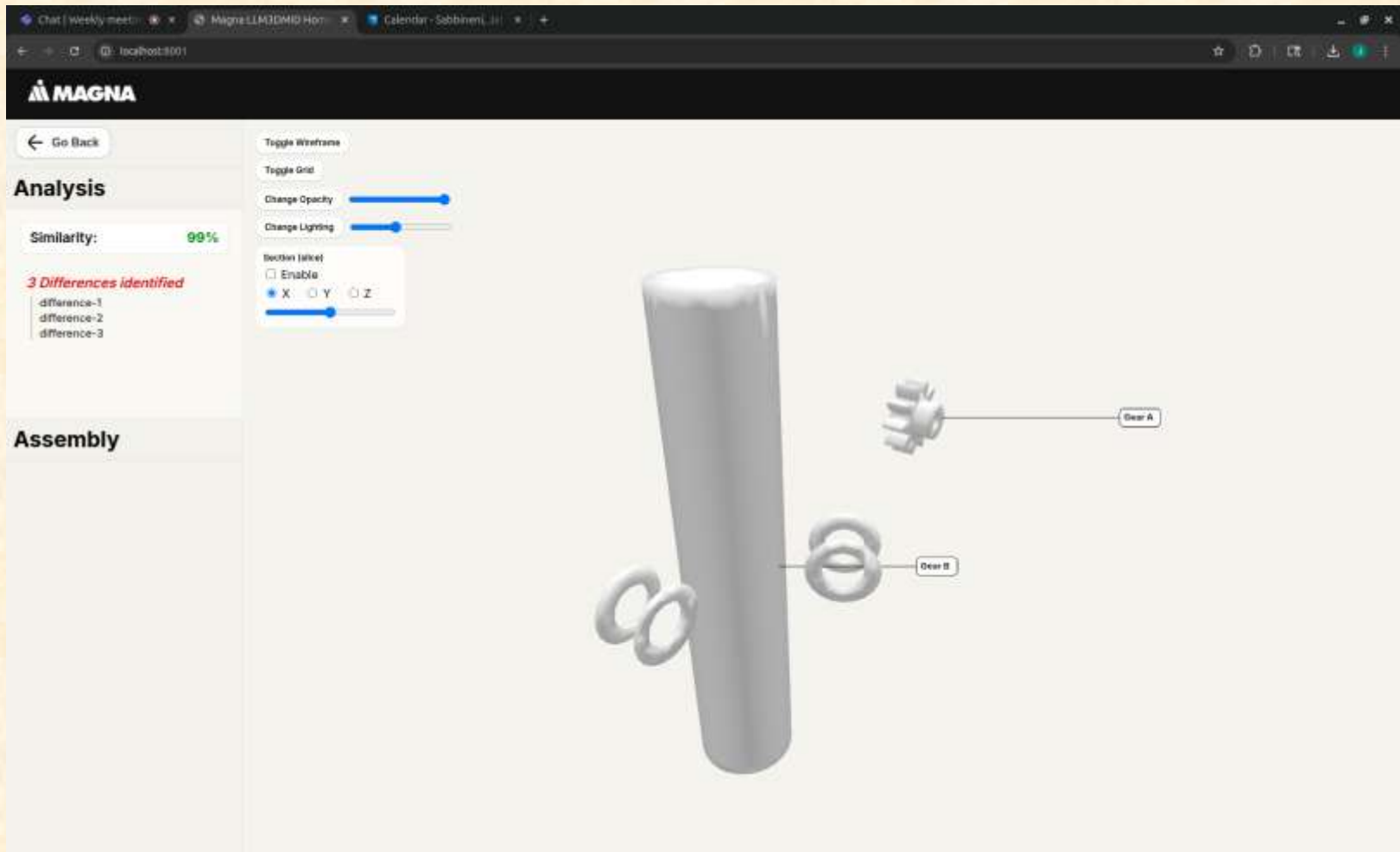
Singular Part 3D View



Selecting Parts for Comparison



Comparison 3D View



What's left to do?

- Decomposition of parts in 3D view
- MCP Server integration
- BLOB Storage migration to S3
- Increase model accuracy

Questions?

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