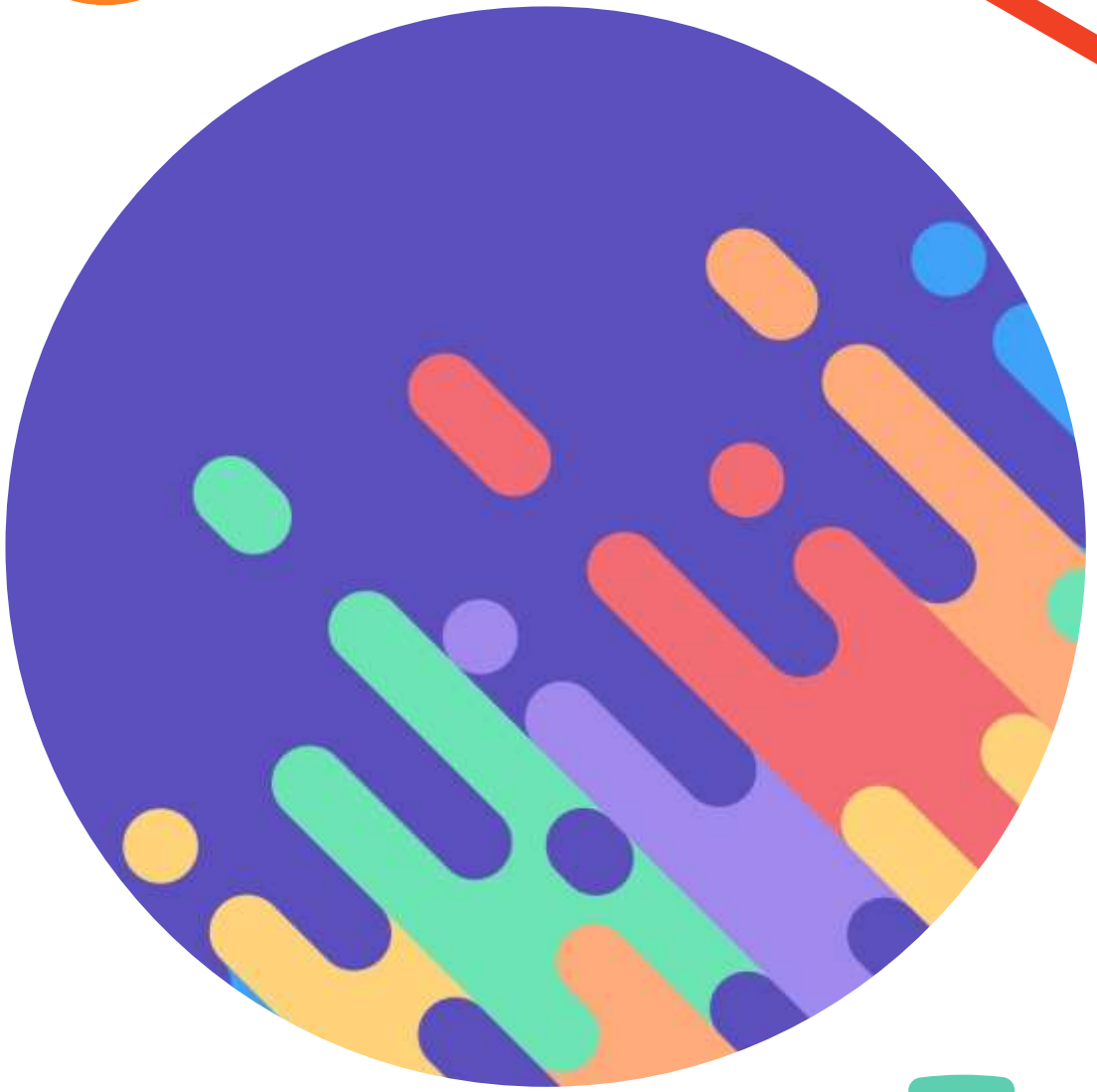

Orca Math ChatBot

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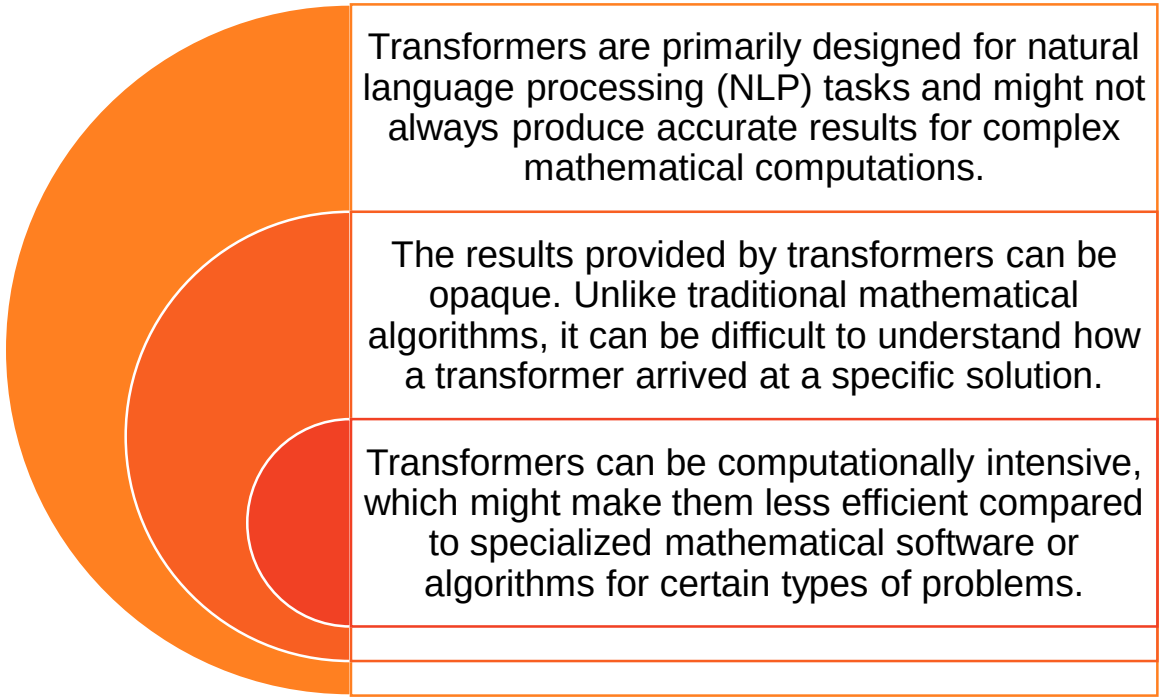
Problem Statement



Features

- Access to a wide range of state-of-the-art pretrained models such as BERT, GPT-3, RoBERTa, T5, and many more, covering diverse NLP tasks.
- Simple and intuitive APIs that allow for easy integration and deployment of models with minimal code.
- Ability to fine-tune models on custom datasets to meet specific needs and improve performance on domain-specific tasks.
- Support for customizing model architecture and training processes.
- Pretrained models available for multiple languages, enabling NLP applications across different linguistic contexts.

Unique Idea Propositions (UIPs)

Utilize Hugging Face transformers to parse and comprehend mathematical problems expressed in natural language, extracting relevant information and converting it into a structured format.

Integrate with symbolic math engines (like SymPy or Mathematica) to handle symbolic manipulation, equation solving, and other algebraic tasks.

Assist students and educators by providing detailed explanations and step-by-step solutions to mathematical problems.

Features of Fine Tuned:

Enhanced Comprehension:	• Improves understanding of complex mathematical problems through natural language interaction.
Efficiency:	• Accelerates problem-solving by combining the strengths of NLP and mathematical engines.
Scalability:	• Adapts to a wide range of problems, from basic algebra to advanced differential equations.

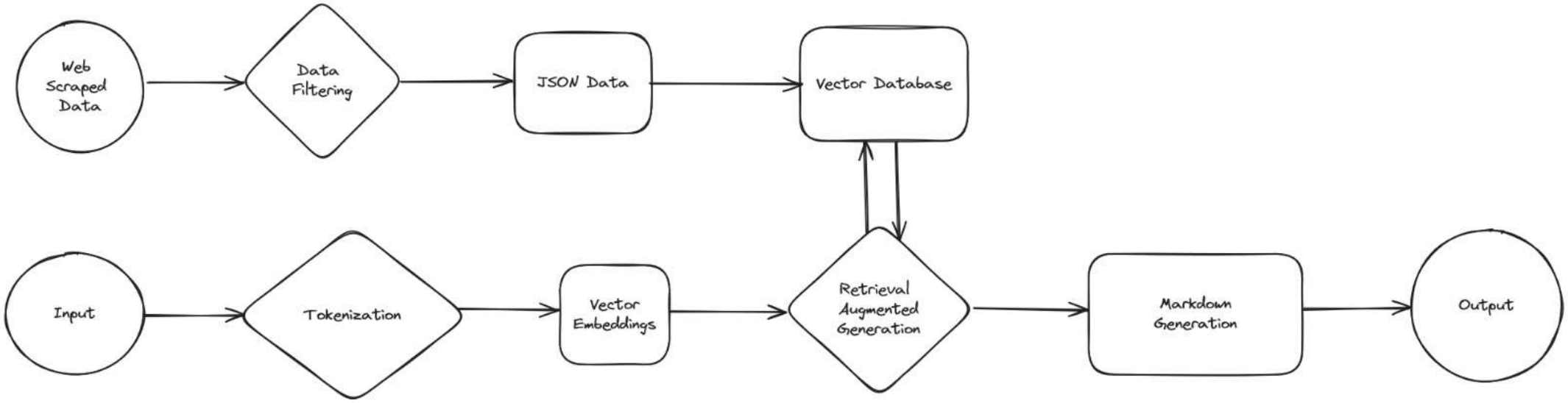
Tech Stack

PYTHON
Hugging Face Transformers
Lang Chain
Stream Lit
Chain Lit
DJango
Pytorch
TensorFlow

DataSet

Type:	• PARQUET
Language:	• English (US)
Link to Dataset:	• https://huggingface.co/Ebullioscopic/orca-math-word-problems-200k

Architecture Diagram



Team Members and Contribution

- Hariharan Mudaliar (RA2211026010183) – Transformer Model
- Tumati Omkar Chowdary (RA2211026010188) – Dataset and Integration
- Akula Satya Sesha Sai (RA2211026010168) – References and Presentation

Conclusion

Integrating Math Orca with Hugging Face transformers presents a groundbreaking approach to solving complex mathematical problems articulated in natural language. This hybrid system leverages the strengths of both advanced natural language processing and sophisticated mathematical reasoning, offering a comprehensive solution that bridges the gap between human language and mathematical computation.

By utilizing Hugging Face transformers, the system can accurately understand and parse natural language queries, extracting the relevant mathematical information needed for problem-solving. Math Orca then processes this structured information, performing symbolic manipulation and numerical computation to arrive at precise solutions.

Thank You ☺