

Knight Foundation School of Computing and Information Sciences

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Material Atlas for Coastal Construction

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PROBLEM

In response to the persistent challenge of limited knowledge exchange between material scientists and engineers work to bridge this gap is being done. Building upon the achievements of a previous team, who laid a solid foundation, the focus now shifts to enhancing user security and data extraction capabilities. While the initial efforts were commendable, there's recognition of the need to fortify the platform with robust security measures and streamlined data retrieval functionalities. This initiative aims to empower collaboration between material scientists and engineers by providing a secure and efficient platform for sharing insights and expertise, ultimately advancing innovation in both fields.

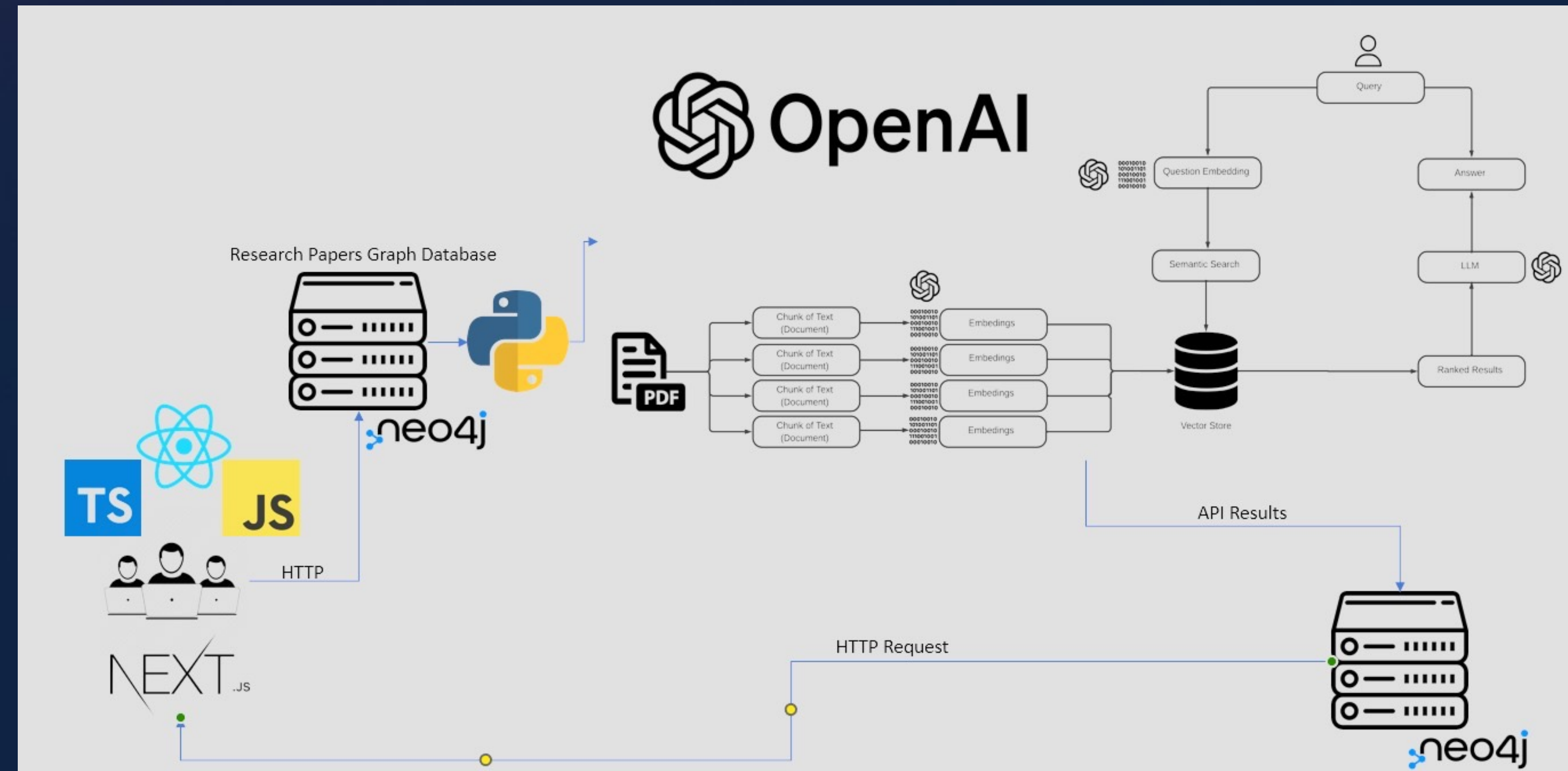
CURRENT SYSTEM

The current system, delivered with a robust structure, lays a solid foundation for future development endeavors. The original team diligently established the groundwork for what promises to be a remarkable project. Their meticulous planning and execution have provided a framework that not only meets present needs but also offers ample room for expansion and enhancement. This well-structured system sets the stage for seamless evolution, ensuring that future iterations can build upon its strengths and adapt to emerging challenges and opportunities in the field.

REQUIREMENTS

- **Data Extraction and Analysis:** Implement AI models to extract material data from research papers, including mix tables, properties, and strength.
- **User Authentication and Security:** Develop secure registration and login functionalities to protect user data and maintain platform integrity.
- **User Interface Design:** Build on current UI for the Material Atlas website, ensuring ease of navigation and accessibility for all users.

SYSTEM DESIGN



SUMMARY

Building upon the initial framework of the "Material Atlas for Coastal Construction," our team at the Knight Foundation School of Computing and Information Sciences, Florida International University, Our team has been dedicated to enhancing the functionality and security of this project, particularly focusing on critical aspects such as data extraction and analysis, as well as user security and authentication. Recognizing the importance of these features in facilitating effective collaboration between material scientists and engineers, we have worked tirelessly to implement robust solutions. Our efforts have involved refining algorithms for efficient data extraction, enabling in-depth analysis to uncover valuable insights. Additionally, stringent security measures and advanced authentication protocols have been integrated to safeguard user information and ensure secure access to the platform. Through our commitment to innovation and excellence, we aim to elevate this project into a comprehensive and trusted resource for knowledge exchange within the scientific community.

ACKNOWLEDGEMENT

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