FYP Proposal

An AI Powered SEO Tool

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Abstract:

This project aims to develop an innovative, data-driven SEO tool that goes beyond traditional solutions to provide users with a holistic approach to optimizing website performance.

By harnessing the power of data science, artificial intelligence, and machine learning, the tool is designed to elevate website visibility and rankings on search engines through intelligent, actionable insights. Unlike existing tools, which often focus on isolated metrics, our tool will not only analyze SEO health but also offer tailored recommendations and transform complex data into user-friendly business insights. These insights are easy to understand, allowing users to make informed decisions without the need for SEO expertise, significantly improving the user experience and outcomes.

Objectives:

The SEO tool's objectives are to:

1. Provide **comprehensive SEO health analysis** by evaluating various on-page, off-page, and technical factors.
1. **Data Analysis and Insights Generation**: Use AI/ML to analyze keyword performance, traffic, and SEO data, identifying patterns and trends to generate actionable insights.
2. **Personalized SEO Recommendations**: Provide tailored recommendations based on website analysis, optimizing on-page and off-page SEO without requiring expert knowledge.
3. **Intelligent Ranking Predictions**: Predict ranking changes and traffic impact based on keyword optimizations, offering data-driven forecasts for strategic planning.

4. **Competitor Analysis and Anomaly Detection**: Monitor competitor SEO performance and detect sudden ranking or traffic changes, helping users stay ahead of market shifts.
5. **Custom Reporting Using NLP**: Translate complex SEO data into simple, understandable business insights using Natural Language Processing, enabling easy interpretation for non-SEO professionals.

Methodology:

1. Keyword Suggestion:

- **Purpose**: To provide users with optimized keyword suggestions that improve their website's visibility and search engine rankings.
- **Implementation**: Uses Natural Language Processing (NLP) models to analyze the content and relevant search trends, integrating AI and ML algorithms like clustering and reinforcement learning to provide highly targeted keyword recommendations. The tool gathers data from APIs (e.g., Google Keyword Planner) and scrapes competitor sites for insights.
- **Technologies Used**:
    - NLP models (BERT, GPT)
    - Clustering algorithms (K-means)
    - Reinforcement learning
    - External keyword data sources (Google Keyword Planner, Ahrefs, SEMrush)
    - Databases (SQL, NoSQL for storing keyword performance data)

2. Monthly Traffic:

Purpose:
To provide users with insights into their website's monthly traffic, helping them understand the performance trends and impact of their SEO strategies.
Implementation:
Leverages API data from tools like SEMrush and Google Analytics to gather traffic data over time. AI/ML models, such as time-series forecasting (e.g., ARIMA, Prophet), can predict future traffic trends based on historical data. The system will alert users to significant changes or drops in traffic and suggest

optimization strategies.
Technologies Used:

- Time-series forecasting models (ARIMA, Facebook Prophet)
- APIs (Google Analytics, SEMrush)
- Databases (SQL for storing traffic history)
- Visualization tools (Plotly, D3.js for displaying traffic trends)

3. Domain Authority:

Purpose:
To track and evaluate the Domain Authority (DA) of a user's website, providing insights into its credibility and ranking potential.
Implementation:
API data from SEO platforms like Moz is used to retrieve Domain Authority. The tool applies ML techniques like regression analysis (e.g., Random Forest, Gradient Boosting) to identify factors that affect a site's DA, such as backlink quality, content structure, and on-page SEO. Recommendations are generated to help improve the DA over time.
Technologies Used:

- Regression models (Random Forest, Gradient Boosting)
- APIs (Moz, SEMrush)
- Databases (SQL/NoSQL for storing DA and relevant metrics)
- AI-powered recommendations engine for DA improvement

4. Backlinks:

Purpose:
To monitor and analyze backlinks, helping users understand the quality and quantity of backlinks impacting their SEO and domain authority.
Implementation:
Uses API data from sources like Ahrefs or SEMrush to gather backlink information. AI models like classification algorithms (e.g., Decision Trees, SVM) analyze the quality of backlinks, identifying valuable links versus spammy ones. Insights on backlink acquisition strategies are provided to users to enhance their backlink profile.
Technologies Used:

- Classification models (Decision Trees, Support Vector Machines)
- APIs (Ahrefs, SEMrush)
- Databases (SQL/NoSQL for storing backlink data)
- Visualization tools (D3.js, Plotly for backlink analysis reports)

5. Ranking Analysis:

- **Purpose**: To track the ranking position of the user's website for specific keywords over time, providing detailed insights and trends.
- **Implementation**: The system pulls ranking data from various search engines via APIs and scrapes competitor rankings to compare and provide ranking improvement strategies. ML models assess trends and suggest potential improvements.
- **Technologies Used**:
    - Ranking APIs (Google Search Console, Bing Webmaster Tools)
    - Time Series Analysis (ARIMA, LSTM)
    - Backend Databases (SQL/NoSQL for storing historical ranking data)

6. Transformation of SEO Metrics into User-Friendly Insights

- **Purpose**: To convert complex SEO metrics into easily understandable insights that users without SEO expertise can act on, thereby improving website performance and search engine rankings.
- **Implementation**: The tool gathers a wide range of SEO metrics (such as keyword rankings, backlink profiles, crawl data, and page load times) and uses data visualization, natural language generation (NLG), and AI-driven recommendations to transform this data into actionable, business-friendly insights. The system employs machine learning to analyze patterns and trends, then generates reports with clear recommendations on what actions the user should take next, such as optimizing specific keywords, fixing broken links, or building high-quality backlinks. Customizable dashboards allow users to track key performance indicators (KPIs) in real-time, presenting the data in a simplified, user-friendly format.
- **Technologies Used**:
    - **Data Visualization Tools**: Plotly, D3.js for intuitive graphs, charts, and visual representations of SEO data.

- **Natural Language Generation (NLG)**: GPT-based models to generate plain-language explanations of complex SEO metrics.
- **Recommendation Systems**: AI models like collaborative filtering or decision trees to offer personalized, actionable insights based on the user's website performance.
- **Backend Databases**: SQL and NoSQL databases for storing SEO data and metrics.
- **Machine Learning Models**: Regression models (e.g., XGBoost) for predicting future performance and classification models to categorize issues by priority level.

Other Possible features:

- Referring Domains
- Keyword Volume
- Keyword Density
- Location Wise Volume
- Serp Checker

Expected Outcomes:

By integrating AI and machine learning capabilities, our SEO tool is expected to provide significant improvements in the way users manage and enhance their website's search engine performance. The tool will offer comprehensive SEO health analysis, delivering not only data but also actionable, easy-to-understand insights tailored for users with or without SEO expertise. This user-friendly approach will allow website owners to make informed decisions, improving their website's visibility and ranking on search engines.

Overall, the tool will streamline the SEO optimization process, making it more accessible and efficient for users, whether they are beginners or professionals. By automating analysis and generating intuitive, data-driven recommendations, the tool will enhance SEO performance, increase organic traffic, and improve overall website rankings, delivering a comprehensive solution for modern SEO challenges.

1. INTRODUCTION

1.1. Background

Search Engine Optimization (SEO) is a critical aspect of digital marketing that helps improve the visibility of websites on search engines like Google. Despite its importance, many businesses and website owners struggle to manage their SEO effectively due to the complexity of the domain and the multitude of factors that influence search engine rankings. Current SEO tools provide valuable data but often lack the ability to transform this data into actionable insights that users without SEO expertise can easily interpret.

Our proposed SEO tool aims to bridge this gap by leveraging advanced AI, machine learning, and data science techniques to deliver a comprehensive, user-friendly solution. Unlike traditional tools, our project will not only analyze SEO metrics but also transform them into easy-to-understand, actionable business insights. The tool will help users optimize their websites and improve search engine rankings by offering personalized recommendations that go beyond simple metric tracking.

1.2. Problem Statement

1.2.1. Challenges in SEO Management

- **Complexity**: SEO involves numerous factors such as keyword optimization, backlinks, crawling, and indexing, which can be difficult for non-experts to manage effectively.
- **Lack of Expertise**: Many website owners lack the specialized knowledge required to interpret SEO data and take actionable steps toward improvement.
- **Overload of Data**: Existing tools often present a wealth of data without offering clear, actionable insights on what to do next, making it hard for users to improve their SEO strategies.

1.2.2. Limitations of Current SEO Tools

- **Data Overload**: While current tools offer various SEO metrics, they often fail to simplify the data for users who may not be SEO experts.
- **Lack of Personalization**: Many tools provide generic reports without considering the specific needs of individual websites or industries, leading to inefficient optimization strategies.
- **Absence of Business Insights**: Most tools don't provide actionable insights that users can easily understand or act upon, especially for those without SEO expertise.

1.2.3. The Need for an Enhanced Solution

There is a need for a more intelligent and user-friendly SEO tool that not only provides comprehensive data but also converts complex metrics into actionable, business-friendly insights. This would allow website owners, regardless of their SEO expertise, to make informed decisions and improve their online visibility.

1.3. Who Needs It?

1.3.1. Small Business Owners

- **Need**: Tools to help improve their website's SEO without requiring a deep understanding of SEO.
- **Market Size**: Millions of small businesses worldwide need to optimize their web presence to compete with larger enterprises.

1.3.2. Website Administrators

- **Need**: Comprehensive SEO analysis and user-friendly recommendations to maintain and enhance website visibility.
- **Market Size**: Millions of websites are launched every year, with many requiring continuous SEO management.

1.3.3. Digital Marketers

- **Need**: Advanced tools that provide clear, actionable insights for their SEO campaigns.
- **Market Size**: The global digital marketing industry is worth billions, with a growing need for smarter, more intuitive tools.

1.3.4. Freelancers and Consultants

- **Need**: A tool that provides clear insights for optimizing clients' websites without requiring specialized SEO knowledge.
- **Market Size**: Millions of freelancers and consultants worldwide manage SEO for clients as part of their services.

1.3.5. E-Commerce Websites

- **Need**: SEO insights to improve product page rankings, increase organic traffic, and boost sales.
- **Market Size**: E-commerce is a rapidly growing industry, with billions of online stores globally seeking to improve their search engine visibility.

1.4. Objectives

1.4.1. Deliver Personalized SEO Recommendations:

- Provide actionable, user-friendly SEO insights by analyzing key metrics such as keywords, backlinks, and rankings. Tailor recommendations based on individual website needs, ensuring alignment with current SEO trends and practices.

1.4.2. Offer Comprehensive Crawling and Indexing Analysis:

- Leverage AI-powered crawling techniques to assess website structure and indexation, helping users identify potential issues such as broken links, unindexed pages, and poor site architecture. Offer real-time feedback to improve website health and performance.

1.4.3. Simplify Data for Non-SEO Experts through Business-Friendly Insights:

- Transform complex SEO data into business-friendly insights using NLP models like GPT-4, enabling users to understand and act on SEO suggestions without needing deep technical expertise.

1.4.4. Analyze SERP Data for Competitive Insights:

- Use data analytics to compare a website's SERP performance with competitors, offering detailed insights into ranking fluctuations, keyword

positions, and market share. This feature will allow users to adapt their strategy based on real-time competitive data.

1.4.5. Track and Visualize Long-Term SEO Performance:

- Implement machine learning models like XGBoost to monitor SEO performance over time. Provide users with interactive visualizations (via Plotly or D3.js) of key metrics such as traffic, rankings, and backlink growth, allowing for data-driven decision-making.

1.4.6. Automate and Personalize Keyword Analysis:

- Use AI models to generate dynamic keyword suggestions based on real-time search trends and competition. Provide a personalized keyword strategy that adapts to changes in search patterns and user behavior.

1.4.7. Ensure Seamless Real-Time Data Processing for Immediate Feedback:

- Utilize FastAPI and WebSocket technologies to ensure real-time processing of SEO metrics, allowing users to receive immediate recommendations and performance updates, ensuring a smooth and interactive user experience.

1.5. In Scope:

➢ Design and implement a comprehensive SEO tool for analyzing website performance and providing actionable insights.

➢ Implement Data Analysis and Insights Generation to identify patterns and trends in keyword performance, traffic potential, and competition levels.

➢ Provide Personalized SEO Recommendations based on user intent, business goals, and competitor analysis.

➢ Develop Intelligent Ranking Predictions to forecast traffic changes and keyword impact on website performance.

➢ Implement Competitor Analysis and Anomaly Detection for identifying gaps, opportunities, and search algorithm updates.

➢ Use NLP for Custom Reporting to generate clear, user-friendly summaries of complex SEO data and actionable insights.

➢ Include multilingual support and options for voice commands to enhance accessibility for diverse users.

➢ Conduct extensive testing to ensure reliability, functionality, and smooth user experience across web and mobile platforms.

➢ Prepare thorough documentation, including system architecture, user guides, and design rationale.

➢ Produce a final report and presentation to demonstrate the project's features, methodology, and impact on SEO improvement.

1.6. Out of Scope:

➢ The project will not include advanced digital marketing analysis beyond SEO metrics.
➢ Direct integration with third-party analytics or marketing automation platforms is not included.
➢ Tailoring the tool for highly specific or niche industries with unusual SEO needs will not be part of the initial scope.
➢ The project will not handle social media metrics, ad campaign management, or customer sentiment analysis.
➢ No provisions will be made for handling complex e-commerce SEO specific features, such as product feed optimization.

1.7. Limitations:

➢ The effectiveness of recommendations may be limited by data quality and completeness, particularly if the tool is used on small websites with insufficient content or backlink profiles.
➢ Real-time analysis features depend on a stable internet connection, and the performance might be affected in areas with slow or intermittent connectivity.
➢ The tool does not account for non-SEO aspects of website performance, such as UX design, content marketing, or ad optimization, which are also crucial for overall digital success.
➢ Adapting to constantly changing search engine algorithms will be a

challenge, requiring continuous updates and refinements to maintain relevance.
➢ Multilingual SEO support will be limited in the initial development phase, with full functionality expected only for English-language websites initially.

2. LITERATURE REVIEW

2.1 Related Work

1. Ahrefs: (https://ahrefs.com/)

Advantages: Comprehensive backlink analysis, keyword research, and content exploration capabilities, giving detailed insights into competitor strategies.
Disadvantages: Lacks integration of AI/ML to provide real-time personalized SEO recommendations, and the interface may be overwhelming for users unfamiliar with SEO metrics.
How Our Tool Covers This: Our tool not only offers advanced SEO metrics analysis but also provides AI-powered, easy-to-understand recommendations, converting technical SEO data into actionable business insights for non-experts.

2. Moz Pro: (https://moz.com/products/pro)

Advantages: Offers intuitive keyword research tools and link tracking, along with detailed rank tracking features.
Disadvantages: Does not provide real-time updates and lacks automation for analyzing changing trends in search engine algorithms.
How Our Tool Covers This: Our tool leverages AI models to adapt to search engine algorithm changes in real-time, providing up-to-date recommendations, while ensuring that the insights are transformed into business-friendly language for users without SEO knowledge.

3. SEMrush: (https://www.semrush.com/)

Advantages: Includes a wide range of tools for PPC, SEO, and content marketing, and provides competitive analysis.
Disadvantages: Its high complexity makes it difficult for non-expert users to interpret data, and lacks AI-driven suggestions for actionable improvements.
How Our Tool Covers This: We integrate machine learning models to automate

SEO suggestions and recommendations, simplifying data interpretation so that businesses can improve their SEO strategies without needing in-depth expertise.

4. Screaming Frog SEO Spider: (https://www.screamingfrog.co.uk/seo-spider/)

Advantages: Excellent for crawling and identifying on-site SEO issues like broken links and duplicate content.
Disadvantages: Does not provide broader SEO insights, keyword analysis, or AI-driven optimization suggestions.
How Our Tool Covers This: Our platform extends crawling capabilities with comprehensive keyword, SERP, and backlink analysis, providing not only metrics but actionable insights based on AI and machine learning models.

2.2. Gap Analysis

The current market solutions for SEO tools reveal several gaps that this project aims to address:

➢ **Data Interpretation for Non-Experts**: Many existing SEO tools provide raw data without converting it into actionable, user-friendly insights. Our proposed tool will bridge this gap by transforming complex SEO metrics into understandable recommendations for users with little SEO knowledge.

➢ **Real-Time SEO Recommendations**: Current tools generally provide static reports or delayed updates on SEO metrics. Our system will offer real-time insights, allowing users to make timely adjustments based on search engine algorithm changes and ranking trends.

➢ **AI and ML Integration**: Most existing SEO tools lack advanced AI and machine learning models to provide personalized and predictive SEO suggestions. Our tool will incorporate these technologies to analyze user websites and deliver tailored recommendations based on performance and market trends.

➢ **Comprehensive Analysis**: While many tools focus on specific features like keyword analysis or backlink tracking, they often lack a holistic view of the

website's SEO health. Our tool will combine features such as keyword analysis, SERP tracking, backlink analysis, and indexing into one platform for a more comprehensive SEO evaluation.

➢ **Accessibility and User Experience**: Several SEO platforms are overwhelming for new users due to their complex interfaces and technical jargon. Our project will prioritize a simple and intuitive user experience, ensuring accessibility across skill levels and devices, including mobile platforms.

Project Title: An AI Powered SEO Tool

Group Leader: Abdul Rehman

Project Members:

Name	Registration ID	Email Address	Signature
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Project Goal:

-Automate comprehensive SEO health analysis by integrating multiple metrics such as keyword rankings, backlinks, SERP analysis, and indexing status.

-Transform SEO metrics into actionable business insights that are easy for users to understand, without requiring advanced SEO expertise.

-Leverage AI and machine learning models to deliver personalized SEO recommendations tailored to specific website needs and industry trends.

-Identify competitor strengths and detect significant performance changes.

-Generate user-friendly reports that simplify complex SEO data into actionable insights.

Objectives:

SEO Health Analysis:	To mimic how search engine bots crawl the website, identifying errors such as broken links, slow-loading pages, or inaccessible sections to improve the overall SEO health.
Data Analysis and Insights Generation:	The project will focus on analyzing keyword performance and trends to derive actionable insights, enabling users to understand the effectiveness of their SEO strategies. By leveraging data retrieved from APIs, the tool will identify patterns that can inform decision-making processes and optimize website visibility.
Personalized SEO recommendations	This feature will provide tailored strategies based on user intent and business objectives, helping users implement specific on-page and off-page SEO improvements. By analyzing individual user data and competitor performance, the tool will suggest optimizations that align with current market trends.
Competitor Analysis and Anomaly Detection	The project will include features that analyze competitor strengths and weaknesses, identifying gaps that users can exploit for

	better performance. Additionally, it will implement anomaly detection to alert users to significant changes in rankings or traffic, enabling quick adjustments to strategies
Custom Reporting Using NLP	The tool will generate user-friendly reports that simplify complex SEO data into actionable insights. By employing natural language processing, these reports will be tailored to meet the needs of non-SEO experts, ensuring that insights are easily understandable and accessible for informed decision-making.

Project Success Criteria:

Assumptions:

- **Real-time keyword data APIs** will provide accurate and up-to-date SEO-related data.
- **ML models** for keyword clustering, competitor analysis, and ranking predictions will provide reliable and actionable insights.
- **Fast API** and backend infrastructure will handle real-time data processing efficiently for continuous keyword tracking and SERP analysis.
- **NLP models** will translate complex SEO data into simple, user-friendly reports and suggestions.
- The Team will try to implement **Maximum Features** in the tool depending upon the time frame of the project.

Risks & Obstacles:

- **API limitations** (rate limits or outdated data from SEMrush, Google Keyword Planner) may affect the real-time accuracy of insights.
- **Delayed ML model predictions** or inaccurate insights might affect user experience and decision-making.
- **NLP processing delays** could hinder the generation of instant, clear, and concise reports, impacting user engagement.
- **Storage and security challenges** related to managing large volumes of SEO data and keyword trends.
- **Some Features** can be replaced / added or removed depending upon the availability and source of data.

Target End Users:
- Small business owners - Website developers - Marketing agencies - Online entrepreneurs - Bloggers - Digital marketers - Non-technical users looking to improve SEO
Advisor:
DR. Khurram Shahzad
Approved By:
Date:

3. Tools and technologies used with reasoning

3.1. Frontend

Plotly

- Used for creating interactive, high-quality data visualizations, enhancing user interaction with charts and graphs.

D3.js

- Enables sophisticated, customizable visualizations, perfect for dynamic and interactive SEO data displays.

React.js

- A popular JavaScript library for building responsive, dynamic UIs, crucial for real-time SEO data updates.

Chart.js

- Lightweight library for simple, easy-to-implement charts like bar, line, and pie charts, ideal for basic metrics.

Bootstrap

- Ensures responsive design across devices, maintaining a consistent and user-friendly interface.

Ant Design

- Provides polished, pre-built components, enhancing the presentation of complex SEO data in an organized layout.

CSS3 and HTML5

- Core technologies for modern web design and structure, ensuring clean and responsive page layouts.

3.2 Backend Tools and Techniques

1. **PostgreSQL**
    - Reasoning: Ideal for handling structured data with advanced querying and integrity features, ensuring consistency in SEO data.

2. **MongoDB**
    - Reasoning: Suitable for managing semi-structured or unstructured data, offering scalability for storing various SEO metrics.

3. **FastAPI**
    - Reasoning: Enables fast, efficient real-time processing and seamless API integration for delivering data and recommendations quickly.

4. **Redis**
    - Reasoning: Used for caching API responses and speeding up repetitive queries for faster performance.
5. **Docker**
    - Reasoning: Facilitates containerization of backend services for consistent deployment across different environments.

3.3 AI/ML Models

Clustering Algorithms (K-Means, DBSCAN)

Reasoning: To cluster keywords based on their relevance, competition level, or user intent. For example, you could group keywords into categories like high-intent or informational, allowing users to focus on different SEO strategies.

Random Forest or Gradient Boosting:

Reasoning: These models can be used to simulate ranking changes under different SEO scenarios, helping users understand the potential impact of different actions.

Similarity Models (Cosine Similarity, Jaccard Index):

Reasoning: For comparing the user's website performance with competitors, highlighting areas for improvement based on competitor strengths.

Collaborative Filtering or Matrix Factorization:

Reasoning: This would allow you to provide personalized recommendations based on previous user data, similar to how recommendation engines work (e.g., suggesting keywords or SEO strategies based on similar users).

Large Language Models (LLMs)

- **Models**: GPT-4, BERT, T5
- **Reasoning**: LLMs are excellent at generating human-like text and explaining complex concepts, making them ideal for transforming raw SEO data into insights that a non-technical user can easily understand.

Natural Language Processing (NLP) Models

- **Example Models**: BERT, RoBERTa
- **Reasoning**: NLP models excel at understanding context and delivering user-centric summaries. They can break down SEO metrics into personalized, actionable insights based on user intent or business goals.

Reinforcement Learning

- **Models**: Deep Q-Network (DQN), SARSA
- **Reasoning**: Reinforcement learning optimizes insights based on user behavior and the effectiveness of prior recommendations, enhancing the tool's ability to provide dynamic, personalized advice.

Automated Reporting & Visualization Tools

- **Models**: XGBoost (for data processing), Plotly/D3.js (for visualization)
- **Reasoning**: Visual insights help communicate complex data in an intuitive way, making it easier for non-experts to interpret SEO metrics at a glance.

4. Work Division:

1. Abdul Rehman (Group Leader)

Tasks:

- Main Focus: Develop clustering algorithms (K-means) and integrate external APIs (Google Keyword Planner) for AI-based keyword suggestions.

- Backend: Work on the backend, particularly database management using MongoDB for semi-structured data.

- AI/ML: Work on reinforcement learning and clustering algorithms for keyword strategy.

- Rotation: Support frontend development by integrating SEO metrics into real-time dashboards using D3.js.

2. Hamza Majeed

Tasks:

Main Focus: Oversee the integration of all AI-driven features and backend development using FastAPI.

- AI/ML: Manage the reinforcement learning-based keyword recommendation system.

-Backend: Lead the backend architecture with PostgreSQL, Redis for caching, and API integrations (e.g., Google Keyword Planner).

-Rotation: Assist in frontend components and ensure seamless integration with backend.

3. Shahroz Naveed

Tasks:

- Main Focus: Implement NLP models (BERT, GPT) to generate custom SEO reports and personalized recommendations.

- Frontend: Lead the frontend development using React.js, Ant Design, and Plotly/D3.js for SEO data visualization.

- AI/ML: Work on NLP-based reporting and data visualization using Natural Language Generation (NLG).

- Rotation: Assist in backend tasks related to API integration for real-time data processing.

4. Hassan Hanif:

Tasks:

- Main Focus: Implement machine learning models (Random Forest, XGBoost) to predict website ranking changes.

- Frontend: Assist with the frontend UI, focusing on displaying ranking data using Chart.js and making the UI responsive with Bootstrap.

- AI/ML: Handle ranking data predictions using time series models (ARIMA, LSTM).

- Rotation: Shift to backend tasks like optimizing data storage with Redis for faster real-time updates.

5. Junaid Rauf:

Tasks:

- Main Focus: Develop AI-based competitor analysis and anomaly detection using ML models.

- Backend: Assist in backend development by managing crawler logs and SEO data storage in PostgreSQL and MongoDB.

- AI/ML: Implement cosine similarity and collaborative filtering for analyzing competitor SEO metrics.

- Rotation: Work on frontend data visualization for competitor analysis insights using Plotly.

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