DATA ANALYTICS / DATA SCIENCE PROJECT DOCUMENT

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1. Title Page

Project Title:
Analysis of AI Generated Images Search Trends Dataset

Your Name:
C.R.Sandeep kumar

Internship / Course Name:
Data Analytics / Data Science

Company / Institution Name:
Inno FortuneIT PVT.LTD

Date:
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2. Abstract

This project analyzes a dataset related to AI Generated Images search trends. The dataset contains 49 records and 3 columns: query, search interest, and increase percent. It represents keyword search popularity and growth trends related to AI-generated images.

The objective of this project is to analyze search behavior, identify high-interest keywords, detect breakout trends, and understand growth patterns in AI-generated image searches. The dataset was provided in CSV format and analyzed using Python with libraries such as Pandas, NumPy, and Matplotlib.

Data cleaning was performed to handle percentage formatting and breakout values. Exploratory Data Analysis (EDA) was conducted to examine keyword popularity distribution and growth trends. The analysis reveals significant breakout keywords and varying search interest levels across related queries.

The final outcome provides insights into trending AI image-related search terms and highlights rapidly growing keywords, helping understand market demand and user behavior in the AI content generation space.

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3. Table of Contents

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4. Introduction

AI-generated images have rapidly gained popularity across industries including marketing, content creation, design, and social media. As AI tools become more accessible, search interest for AI-generated image-related keywords continues to evolve.

Understanding search trends helps businesses identify user demand, rising technologies, and content opportunities. This project analyzes keyword search interest data related to AI-generated images to identify trending terms and growth patterns.

The study demonstrates how search trend analysis can support decision-making in digital marketing, product development, and AI-based creative industries.

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5. Problem Statement

With the increasing popularity of AI-generated images, it is important to understand:

- Which keywords are most searched?
- Which terms are growing rapidly?
- What trends indicate rising user interest?

The problem addressed in this project is:

How can search trend data be analyzed to identify high-interest and breakout keywords related to AI-generated images?

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6. Objectives

- Analyze AI-generated image-related search queries
- Identify keywords with highest search interest
- Detect breakout and high-growth keywords
- Compare percentage increases across queries
- Generate meaningful insights from trend data

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7. Dataset Description

- **Dataset Name:** AI Generated Images Search Trends Dataset
- **File Format:** CSV
- **Number of Rows:** 49
- **Number of Columns:** 3

Columns Included:

1. **query** – Search keyword related to AI-generated images
2. **search interest** – Popularity score (scaled value, max = 100)
3. **increase percent** – Growth percentage or "Breakout" indicator

This dataset represents search trend analysis data, similar to Google Trends output, where search interest is indexed relative to peak popularity.

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8. Tools & Technologies Used

Category	Tools Used
Programming	Python
Data Handling	Pandas, NumPy
Visualization	Matplotlib
Environment	Jupyter Notebook / VS Code
Data Format	CSV

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9. Methodology (Workflow)

The project followed the below steps:

1. Import dataset (CSV file)
2. Inspect dataset structure
3. Check data types and missing values

4. Clean percentage and “Breakout” values
5. Perform Exploratory Data Analysis (EDA)
6. Generate visualizations
7. Extract insights
8. Document findings

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10. Data Cleaning

The following cleaning steps were performed:

- Verified dataset shape (49 × 3)
- Checked for missing values
- Converted “search interest” column to numeric format
- Standardized “increase percent” values
- Identified and handled “Breakout” values separately
- Removed formatting inconsistencies in percentage values

This ensured accurate numerical analysis.

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11. Exploratory Data Analysis (EDA)

EDA focused on:

Distribution of search interest values

Identification of highest-ranked keywords

Analysis of percentage growth trends

Detection of breakout keywords

Observations:

Maximum search interest value = 100

Several keywords marked as “Breakout” indicating extremely high growth

Some keywords showed negative percentage growth

Search interest values range widely across queries

Visualizations used:

Bar chart of top search queries

Distribution plot of search interest

Comparison of growth percentages

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12. Insights & Visualizations

Key insights from the dataset:

- “AI generated images” has the highest search interest score (100).
- Multiple keywords such as “free ai generated photos” and similar queries show breakout growth.
- Some keywords show declining percentage growth (-80%), indicating reduced trend momentum.
- Free-related AI image queries appear frequently, suggesting strong user interest in free AI tools.

These insights indicate growing public interest in AI-generated image platforms and tools.

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13. Results / Output

The project successfully produced:

- Cleaned dataset ready for analysis
- Identification of top-performing keywords
- Detection of breakout search terms
- Visualization of search interest distribution
- Comparative growth trend analysis

The output highlights strong growth in AI-generated image search trends and identifies high-demand keywords.

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14. Challenges

During analysis, the following challenges were encountered:

- “Breakout” values mixed with percentage values
- Percentage values stored as text (e.g., “-80%”)
- Limited number of columns for deeper statistical analysis
- Lack of time-series data for long-term trend analysis

These challenges were addressed through preprocessing and structured analysis.

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15. Recommendations

Based on the findings:

- Focus on high-growth “Breakout” keywords
- Target free AI image-related keywords for marketing strategies
- Monitor search trends regularly
- Expand dataset to include time-based data for deeper insights
- Combine with regional data for better segmentation

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16. Conclusion

This project analyzed a 49-record dataset related to AI-generated image search trends. Through structured data cleaning and exploratory analysis, significant insights were identified regarding keyword popularity and growth patterns.

The analysis shows strong user interest in AI-generated image tools, particularly free options. Breakout keywords indicate rapidly increasing demand in this domain.

This project demonstrates the practical application of data analytics techniques in understanding digital search behavior and emerging AI trends.

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17. Future Scope

The project can be enhanced by:

- Adding time-series analysis
- Integrating real Google Trends API data
- Performing predictive trend forecasting
- Building interactive dashboards (Power BI / Tableau)
- Applying machine learning for trend prediction