

# THE AI REVOLUTION: INVESTMENT ANALYSIS OF THE 10 LEADING SOFTWARE GIANTS



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# MEET THE TEAM



## ISAIAH YU

Applied AI techniques like predictive modeling to generate insights and forecast revenue growth. Automated analysis using machine learning and documented key findings in a structured report.



## APRIL ANTHONETTE PEÑAFIEL

Identified the top 10 enterprise software companies by revenue and market cap. Collected financial data from reliable sources and performed data cleaning, handling missing values and standardizing formats. Saved the processed data in structured formats for analysis.



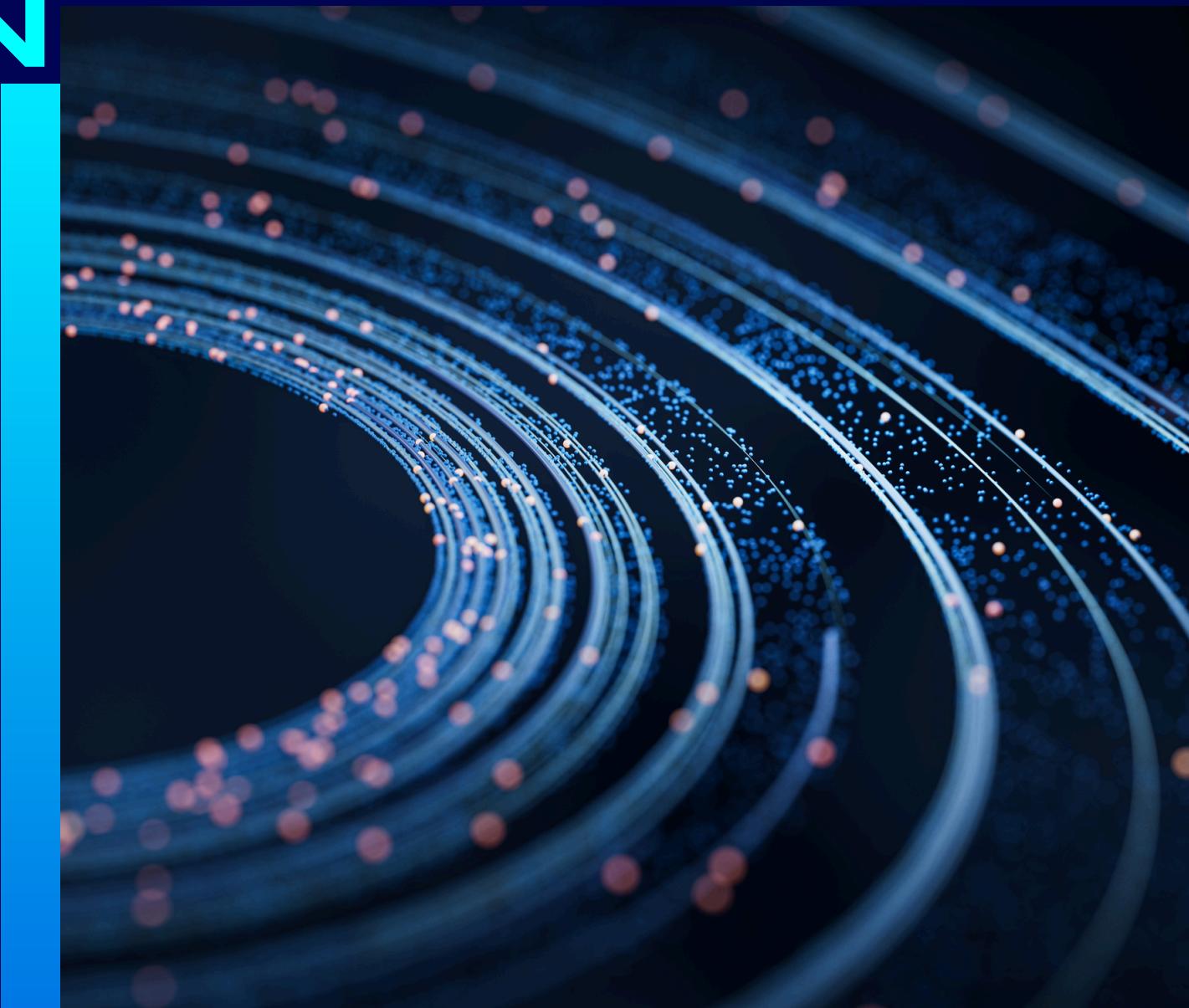
## SAKSHAM KHURANA

Conducted statistical analysis using Pandas and NumPy in Google Colab. Applied regression and clustering models to identify trends. Created visualizations with Matplotlib and Seaborn to compare financial metrics and analyze historical correlations.

# PROJECT DESCRIPTION

Our project focuses on evaluating investment opportunities among top enterprise software companies before and after AI Boom.

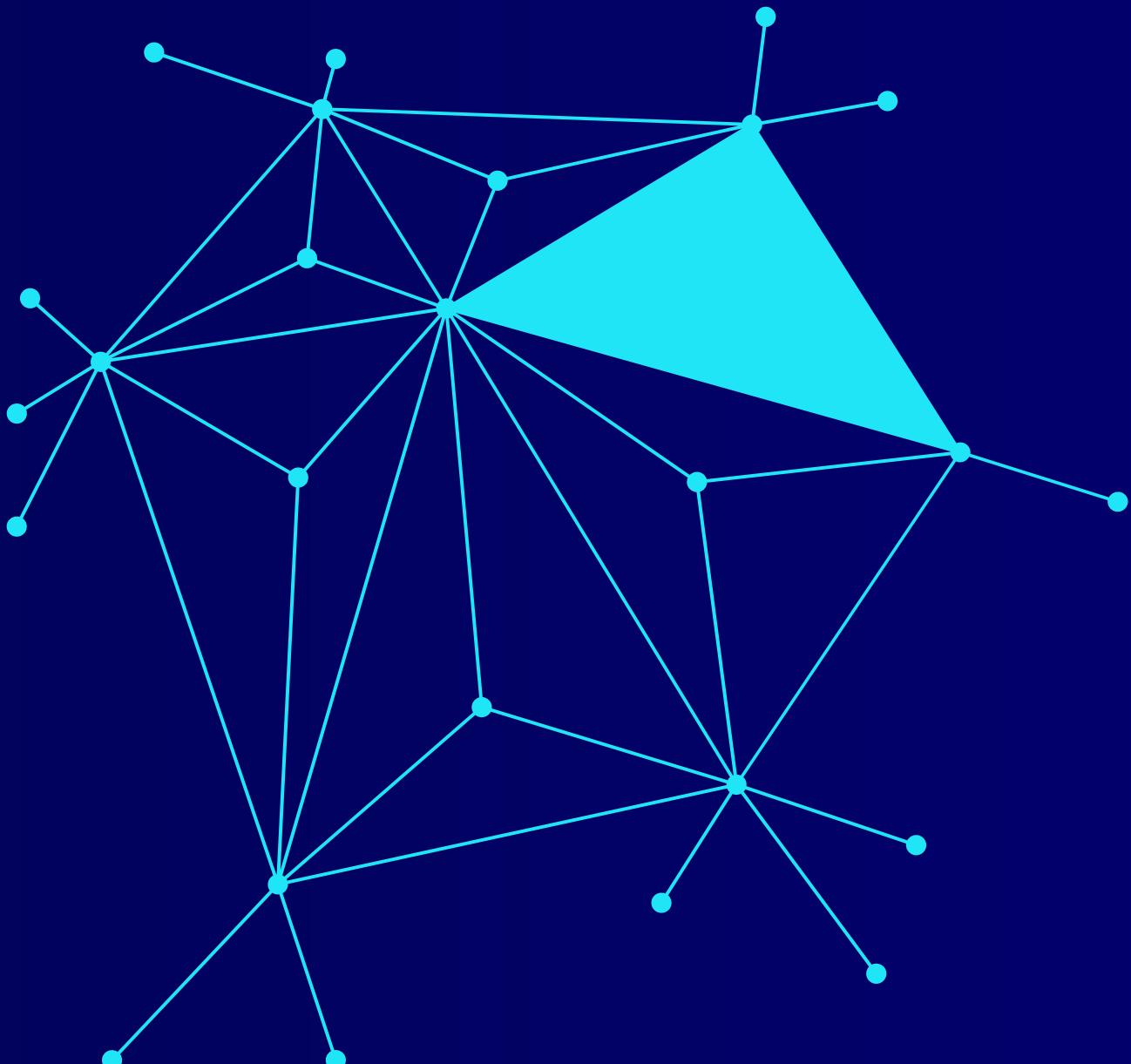
We analyzed P/E ratios, profit margins, cash flow patterns, growth forecasts, and economic resilience using advanced analytics and AI tools to help support data-driven investment decisions.



# INDUSTRY CONTEXT

The enterprise software sector shows extreme valuation disparities across established players and growth companies from 2020 to 2024.

The industry is transforming through cloud, AI, and subscription models, with varying economic resilience. Key challenge: synthesizing market valuations with operational performance to identify true investment value.



# PROJECT OBJECTIVES

- Identify undervalued companies using P/E and profit margin analysis
- Assess financial stability through cash flow pattern evaluation
- Identify sustainable growth through aligned revenue and income forecasts
- Measure economic downturn resilience of companies
- Create an integrated decision framework balancing current performance with growth potential
- Demonstrate enhanced insights through AI-powered analysis

# TECHNICAL STACK & KEY SKILLS

- Python - language for data processing & analytics
- Microsoft Excel - for data framework
- Claude - data cleaning
- Google Colab - data analysis, interpretation and visualization
- ChatGPT - as GenAI & generating code



# APPLICATION OF TECH TOOLS- PHASE 1

## Phase 1: Data Collection & Preparation

Purpose: Gather, clean, and structure raw investment data for analysis.

Tools & Implementation:

- Microsoft Excel: Initial data repository and basic organization
  - Import raw investment data from various sources
  - Create structured datasets with consistent formatting
  - Perform basic data validation and error checking
- Claude: Data cleaning and transformation
  - Identify and handle missing values, outliers, and inconsistencies
  - Standardize data formats (dates, currencies, numerical values)
  - Generate data cleaning scripts that can be applied to future datasets
  - Document data cleaning decisions and transformations

# DATA FRAMEWORK

YEAR	COMPANY	MARKET CAP	REVENUE	P/E RATIO	GROSS PROFIT	PROFIT MARGIN	ROA	ROE	ROI	EPS	EBITDA
2020	APPLE	2255	274.52	35.5	104.956	0.209	0.1731	0.8787	0.8071	3.74	77.344
2021	APPLE	2901	365.82	29.2	152.836	0.252	0.2291	1.5007	0.3381	6.08	120.233
2022	APPLE	2066	394.33	21.9	170.782	0.255	0.2886	1.9696	-0.2651	5.92	130.541
2023	APPLE	2994	383.29	29.8	169.148	0.2397	0.2939	1.5608	0.4861	6.46	125.82
2024	APPLE	3789	391.04	37.3	180.683	0.243	0.2791	1.6459	0.3446	6.31	134.661
2020	MICROSOFT	1501	143.015	32.8	96.937	0.309	0.1632	0.3743	0.1542	5.82	65.755
2021	MICROSOFT	1997	168.088	35.5	115.856	0.365	0.1844	0.4315	0.1964	8.12	81.602
2022	MICROSOFT	1844	198.27	26.6	135.62	0.366	0.214	0.4368	0.21	9.7	97.843
2023	MICROSOFT	2211	211.915	33.9	146.052	0.343	0.1933	0.3509	0.1925	9.72	102.384
2024	MICROSOFT	2790	245.122	38.5	171.008	0.354	0.1807	0.3283	0.1807	11.86	131.72
2020	GOOGLE	1200	182.53	29.6	97.6	0.2206	0.126	0.1809	0.1809	2.93	61.91
2021	GOOGLE	1500	257.64	25.4	146.5	0.2951	0.2116	0.3022	0.3022	5.61	103.52
2022	GOOGLE	1200	282.84	19.3	154.7	0.212	0.1642	0.2341	0.2341	4.56	87.61
2023	GOOGLE	1500	307.39	23.9	174.1	0.2403	0.1834	0.2604	0.2604	5.8	96.85
2024	GOOGLE	1800	350.02	23.3	203.7	0.286	0.2224	0.308	0.308	8.04	129.87
2020	ORACLE	200	39.068	17.02	31.13	0.2594	0.0878	0.797	0.1049	3.37	16.864
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# APPLICATION OF TECH TOOLS- PHASE 2

## Phase 2: Analysis & Modeling

Purpose: Process the prepared data to extract insights and develop investment models.

Tools & Implementation:

- Google Colab: Data analysis and visualization
  - Perform statistical analysis on investment parameters
  - Create correlation matrices and identify key relationships
  - Develop and test investment models (e.g., risk assessment, return projections)
  - Generate interactive visualizations of market trends and portfolio performance
- ChatGPT: Code generation and optimization
  - Generate Python code for complex analysis algorithms
  - Optimize existing analysis scripts for better performance
  - Create reusable code modules for common investment calculations
  - Assist with debugging and improving data processing workflows

# APPLICATION OF TECH TOOLS- PHASE 3

## Phase 3: Insight Generation & Decision Support

Purpose: Interpret results, generate actionable insights, and support investment decisions.

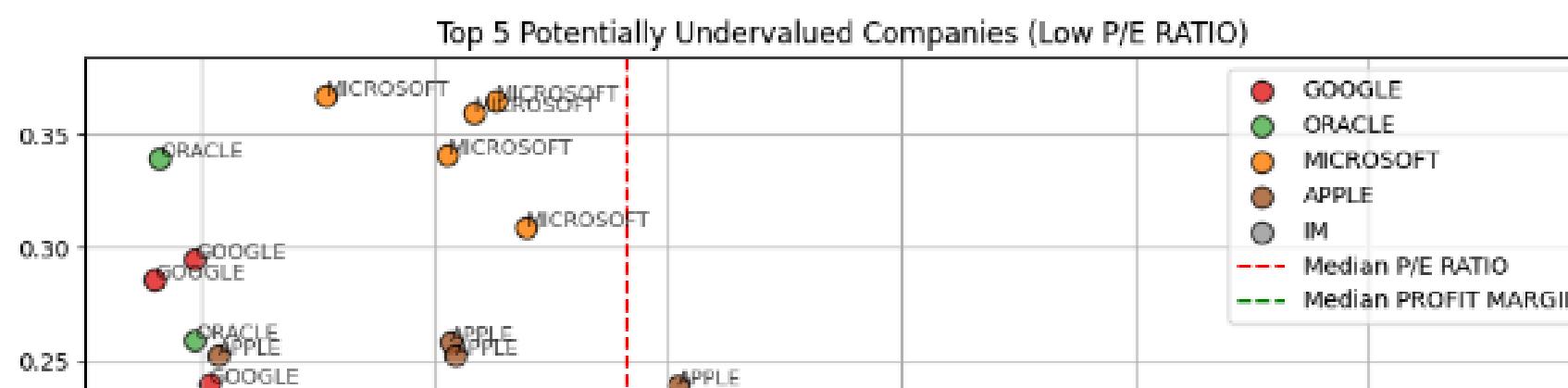
Tools & Implementation:

- Google Colab: Advanced visualization and scenario testing
  - Create comprehensive dashboards for investment performance tracking
  - Develop what-if analysis capabilities for testing different investment scenarios
  - Implement automated reporting systems for regular portfolio reviews
  - Enable real-time data integration for timely decision making
- Claude & ChatGPT: Insight generation and decision support
  - Interpret analysis results and extract key insights
  - Generate investment recommendation reports with supporting evidence
  - Develop natural language summaries of complex technical findings
  - Create decision frameworks that combine quantitative analysis with qualitative factors
  - Automate regular market intelligence reports from diverse data sources

# DATA REPORT

## Investment Decision Analysis of the 10 Largest Enterprise Software Companies:

### 1. Price to Earnings Ratio



# CONCLUSION

Analysis of the top 10 enterprise software companies, we discovered:

- **Value Leaders:** Microsoft, Google, Apple, and Oracle balance reasonable P/E ratios with strong profit margins.
- **Cash Flow Strength:** SAP and ServiceNow show stable cash flow patterns; Apple and Google excel at operational cash generation.
- **Sustainable Growth:** Palantir, ServiceNow, and Google align revenue and income growth forecasts positively, while Salesforce shows concerning divergence.
- **Market Resilience:** Apple, Microsoft, Google, Oracle, and SAP maintained strong performance during the 2020 economic downturn.

Investment Strategy, we suggest investors to focus on established market leaders with proven profitability, sustainable growth, and economic resilience rather than purely speculative investments.



# CREDITS

Ausbiz Consulting

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Arjumand as Project Supervisor

Loren Dsouza

