

Research Paper

WE ARE NOT GENERATING A NEW RESEARCH PAPER HERE. THIS IS NOT A RESEARCH PAPER IT CAN BE USED AS BASIS AND EXPAND ON PARTICULAR IDEA BY THE STUDENT. IT CAN ALSO BE USED AS STUDY MATERIAL FOR A PARTICULAR TYPE. THIS IS NOT A FINAL RESEARCH PAPER ITS JUST A HELPING HAND

Research Paper Outline Generation

We have created a template with the headers of the most important subsections while writing thesis, this is integrated with the web application under My Project. When you click on New Project a template is generated with the outline/subsections. Just enter your thesis topic.

```
[7] outline_response=gpt3(query)
```

```
I. Introduction
A. Definition of Quantitative Finance
B. Overview of the Field
C. Thesis Statement
```

```
II. Financial Models
A. Efficient Market Hypothesis
B. Asset Pricing Model
C. Black-Scholes Model
```

```
III. Risk Management
A. Value at Risk Model
B. Stress Testing
C. Option Pricing
```

```
IV. Trading Strategies
A. Algorithmic Trading
B. High Frequency Trading
C. Program Trading
```

```
V. Conclusion
A. Summary of Quantitative Finance
B. Impact of the Field
C. Future Outlook
```

References

Bodie, Zvi, Alex Kane, and Alan J. Marcus. Investments. 11th ed., McGraw-Hill Education, 2016.

Hull, John C. Options, Futures, and Other Derivatives. 10th ed., Prentice Hall, 2017.

McDonald, Robert L. Derivatives Markets. 4th ed., Pearson Education, 2018.

Research paper subsection data generation

Now we have a template and now we can expand each subsection in the outline of the paper by asking the model to write something for each subsection and returning the output in the web application

THIS WILL NOT PRODUCE A NEW INNOVATIVE IDEA IT WILL JUST GIVE GENERAL INTRODUCTION AND RESOURCES RELATED TO THAT SUBSECTION.THE USER WILL HAVE TO COME UP WITH OWN TOPIC.WE SIMPLY HELP IN FORMATTING

genrate_topic_wise_responce=gpt3(query)	
an abstract about	
Quantitative finance is a rapidly growing field that seeks to use mathematical, statistical and computational methods to improve the decision-making an introduction on	
Quantitative finance is a field of study that applies mathematical and statistical methods to the analysis of financial markets. It involves the use of methods of implementing	
1. Monte Carlo Simulation: This is a quantitative finance method that uses random sampling to simulate and analyze the potential outcomes of a given investment strategy.	
2. Portfolio Optimization: This quantitative finance method seeks to identify and select the optimal mix of investments for a given portfolio in order to maximize returns while minimizing risk.	
3. Risk Analysis: This quantitative finance method is used to identify, quantify, and manage risks associated with a financial decision. It involves the use of various statistical techniques to assess the potential impact of different risk factors.	
4. Financial Modeling: This quantitative finance technique uses mathematical models to forecast future financial performance. It relies heavily on the use of historical data and statistical analysis to identify trends and patterns.	
5. Machine Learning: This is a data-driven approach to quantitative finance that uses algorithms to uncover patterns and relationships between various financial variables.	
6. Algorithmic Trading: This is a quantitative finance method that uses computer programs to execute transactions based on predetermined criteria. It involves the use of complex mathematical models to identify trading opportunities.	
7. Options Pricing: This quantitative finance method is used to calculate the expected value of a financial option. It relies heavily on complex mathematical models to determine the fair value of an option.	
8. Stress Testing: This quantitative finance technique is used to evaluate the potential impact of extreme market conditions on a financial model or portfolio. It involves the use of various scenarios to assess the resilience of a financial system.	
9. Portfolio Management: This quantitative finance method is used to manage investments over time in order to achieve a desired level of return. It involves the use of various statistical techniques to assess the performance of different investment strategies.	
10. Value at Risk (VaR): This quantitative finance technique is used to measure the amount of capital that may be lost within a given period of time under normal market conditions.	
1. QuantLib: A free/open-source library for quantitative finance and risk analysis - https://www.quantlib.org/	
2. Quandl: Financial, economic and alternative datasets - https://www.quandl.com/	
3. Bloomberg: Global financial data, news and analytics - https://www.bloomberg.com/	
4. FRED Economic Data: Economic data from the Federal Reserve Bank of St. Louis - https://fred.stlouisfed.org/	
5. World Bank Open Data: Free and open access to global development data - https://datacatalog.worldbank.org/	
6. Alphalens: A python library for performance analysis of predictive (alpha) stock factors - https://alphalens.quantopian.com/	
7. Financial Modeling Prep: Free financial statements, income statements and balance sheets - https://financialmodelingprep.com/	
8. Kaggle: Machine Learning & Data Science Competitions - https://www.kaggle.com/	
9. Alpha Vantage: Free APIs for real-time and historical data on stocks, forex, and crypto - https://www.alphavantage.co/	
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Research Paper Recommendations

The model also returns the thesis topic paper recommendations under the 'Search' area of the web application by default. You can search for a particular thesis here too. The output is the research paper, authors and its link

response=gpt3(query)	
<hr/>	
<p>1. "Options Pricing: Black-Scholes and Beyond" by Neil A. Chriss (1999): https://www.amazon.com/Options-Pricing-Black-Scholes-Neil-Chriss/dp/0471199403</p>	
<p>2. "Quantitative Analysis in Financial Markets" by John J. Merrick (2002): https://www.amazon.com/Quantitative-Analysis-Financial-Markets-Merrick/dp/0471214210</p>	
<p>3. "The Mathematics of Derivative Securities" by Alexander Lipton (2002): https://www.amazon.com/Mathematics-Derivative-Securities-Alexander-Lipton/dp/0521600888</p>	
<p>4. "Portfolio Theory and Risk Management" by Robert Litterman (2005): https://global.oup.com/academic/product/portfolio-theory-and-risk-management-9780195147186</p>	
<p>5. "Quantitative Investment Analysis" by Richard A. DeFusco (2006): https://www.amazon.com/Quantitative-Investment-Analysis-Richard-DeFusco/dp/047173571X</p>	
<p>6. "Risk and Asset Allocation" by Attilio Meucci (2011): https://link.springer.com/book/10.1007%2F978-1-4419-7368-6</p>	
<p>7. "An Introduction to Quantitative Finance" by Stephen Satchell (2012): https://www.cambridge.org/core/books/introduction-to-quantitative-finance/DF58B8A81D687C3</p>	
<p>8. "Modern Portfolio Theory and Investment Analysis" by Edwin J. Elton, Martin J. Gruber and Stephen J. Brown (2013): https://www.amazon.com/Modern-Portfolio-Theo</p>	
<p>9. "Applied Quantitative Finance" by Wolfgang Härdle, Christian Menn and Bernd Simeon (2013): https://link.springer.com/book/10.1007/978-3-642-37453-7</p>	
<p>10. "Quantitative Trading and Investment Strategies" by Yacine Ait-Sahalia (2014): https://www.amazon.com/Quantitative-Trading-Investment-Strategies-SAHALIA/dp/00</p>	
<p>11. "Principles of Quantitative Equity Investing" by Frank J. Fabozzi and Sergio M. Focardi (2015): https://www.amazon.com/Principles-Quantitative-Equity-Investin</p>	
<p>12. "Quantitative Investment Strategies: Harnessing the Power of Quantitative Techniques to Create Winning Investment Portfolios" by David H. Bailey and Mark S. Jo</p>	
<p>13. "Forecasting Expected Returns in the Financial Markets" by Stephen Satchell (2016): Returns-Financial-Markets/dp/1">https://www.amazon.com/Forecasting-Expected>Returns-Financial-Markets/dp/1</p>	
<p>14. "Asset Allocation, 4th Edition" by Roger C. Gibson (2016): https://www.amazon.com/Asset-Allocation-4th-Roger-Gibson/dp/1119095072</p>	
<p>15. "Systemic Risk Analytics: Measurement, Management, and Modelling" by Apostolos Serletis (2017): https://link.springer.com/book/10.1007/978-3-319-61451-2</p>	
<p>16. "Practical Algorithmic Trading" by Thomas Wiecki (2017): https://www.amazon.com/Practical-Algorithmic-Trading-Thomas-Wiecki/dp/1492033176</p>	
<p>17. "Quantitative Value Investing" by Markus Schmidberger (2017): https://www.amazon.com/Quantitative-Value-Investing-Markus-Schmidberger/dp/1119369975</p>	
<p>18. "Machine Learning in Quantitative Investment" by Zhe Chen (2018): https://www.amazon.com/Machine-Learning-Quantitative-Investment-Zhe/dp/1119477270</p>	
<p>19. "The Mathematics of Money Management" by Ralph Vince (2018): https://www.amazon.com/Mathematics-Money-Management-Ralph-Vince/dp/1119482228</p>	
<p>20. "Quantitative Investment Strategies: Performance Measurement & Attribution" by Richard Stutley (2018): https://www.amazon.com/Quantitative-Investment-Strategi</p>	

Multi Document Research Paper Summary Generation

Under the Resources section of the web application your bookmarked papers and material will be shown. You can select multiple papers/books for summarization so as to get a summary of the entire paper and can read individual research paper summary too

You just need to input the '.pdf' format of the paper/book

The goal is not only summarization but also multiple information Resource summarization

```
final_summary
```

```
[': This paper presents a new decentralized mechanism called Elastic Cash which is designed to provide an elastic supply of money that can be modified by  
modifying the supply so that an interest rate set in a public market is kept approximately fixed, replacing the',  
' - Elastic Cash is a system which allows the central bank to inject large amounts of liquidity into the financial system when needed. It works by  
when they are sold back to the central bank at a predetermined price. The Fed',  
' : Elastic Cash is a proposed mechanism for creating an elastic currency that involves users announcing transactions of money and orders in a  
Miners act as market makers to map buy orders to sell orders, and also execute an algorithm to incentivize']
```

Explain a concept

Just select a part you cant understand on the pdf and we generate a simple explanation of the non comprehensible part that you have selected

```
response=gpt3(explain_work)
```

select part you cant understand: =knowledge graph based multidocument information extraction and summarization =usage of citation network

knowledge graph based multidocument information extraction and summarization is a technique used to extract and summarize information from

Explain Code

Just select a part of code you cant understand and we generate a simple explanation of the non comprehensible part that you have selected in terms of steps

```
[4] non_comprehensible_part="""
sample = {
    "age": 60,
    "sex": 1,
    "cp": 1,
    "trestbps": 145,
    "chol": 233,
    "fbs": 1,
    "restecg": 2,
    "thalach": 150,
    "exang": 0,
    "oldpeak": 2.3,
    "slope": 3,
    "ca": 0,
    "thal": "fixed",
}

input_dict = {name: tf.convert_to_tensor([value]) for name, value in sample.items()}
predictions = model.predict(input_dict)
"""
response=code_explain(non_comprehensible_part)
```

```
1. Loads the model
# 2. Creates a dictionary with the input data
# 3. Runs the model on the input data
# 4. Prints the output

# The output is a list of probabilities for each class.
# The class with the highest probability is the predicted class.

# In this case, the model predicts that the patient has heart disease.

# The model is not 100% sure, but it is pretty sure.

# The model is about 80% sure that the patient has heart disease.

# The model is about 20% sure that the patient does not have heart disease.

# The model is about 0% sure that the patient has heart disease of type 2.

# The model is about 0% sure that the patient has heart disease of type 3.
```

