QUANT
INSTI
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Certificate in Sentiment

Analysis and Alternative Data

for Finance (CSAF)

Brought to you by QuantInsti®

In partnership with

OptiRisk
SYSTEMS

UNICOM

CONTENTS

ABOUT QUANTINSTI

QuantInsti is one of the world's biggest algorithmic & quantitative trading institutes. From its early days, QuantInsti focused on bridging the industry knowledge gap in the field of high-frequency trading and has come a long way in the last decade. Today, it has learners from 200+ countries and territories.

It was founded by a group of technocrats and traders in 2010 with the goal of democratizing Algorithmic & Quantitative Trading for everyone through educational and technological solutions. QuantInsti is a venture by iRage, one of the leading HFT and Algorithmic trading firms in India.

QuantInsti has a well regarded instructor led online training product that is popular and highly beneficial for serious investors and traders across multiple asset classes and geographies: Executive Programme in Algorithmic Trading (EPAT®).

ABOUT UNICOM AND OPTIRISK

Established in 1984, UNICOM is an events and training company specialising in the areas of business, IT and Quantitative Finance. The company's products include conferences, public and in-house training courses (including certified training) and networking events.

In the domain of Quantitative Finance it draws upon the specialist knowledge of OptiRisk Systems. OptiRisk is a leading Financial Analytics Company. UNICOM and OptiRisk have a long association and have the same founder and shared ownership. UNICOM and OptiRisk operate both from UK and India.

ABOUT THE PROGRAMME

The CSAF programme is designed for finance professionals who are looking to develop their careers in modern methods in finance using News, Sentiment Analysis and Alternative Data.

The programme covers various aspects of trading and investment decisions using News Analytics, Sentiment Analysis and Alternative Data from the perspective of their application in the competitive world of Finance.

This instructor-led course is comprehensive and offers unparalleled insights into the world of Algorithms and the latest thinking in financial technology.

This course is designed by leading Algorithmic Traders, Sentiment Pundits, Quantitative Modelling experts and HFT thought leaders.

KEY TAKEAWAYS

- Understand various types of sentiments and how these affect the financial market

- Be able to distinguish between the motivations and perspectives of different market participants and parties who influence the financial market

- Learn different sources of sentiment data

- Understand how different sentiment works: Investor Sentiment, Media Sentiment, Market Sentiment, Crowd Sentiment

- Learn to work on quantified sentiment scores that are extracted from the qualitative contents of News, Newswires, Social Media, Microblogs (Twitter) and Search engines

- Learn Asset Allocation Strategies: Enhanced by News and Micro-Blog

- Learn Forecasting crude oil futures prices using global macroeconomic news sentiment

- Know how Equity portfolio risk estimation works using market information and sentiment

- Models to Exploit Sentiment Analysis and Trading Strategies

- Learn to logically analyze the distinction between Opinions and Sentiment Data (facts)

MODULES

- Knowledge of basic trading procedures and basics of algorithmic trading: know and understand the terminology
- Understand statistical methods and statistical measurements including autocorrelation function, partial autocorrelation function, Maximum Likelihood Estimation (MLE), Akaike Information Criterion (AIC), Mean Absolute Error (MAE), Root Mean Squared Error (RMSE)
- Basic knowledge of time series analysis, stationarity of time series, and forecasting using ARIMA
- Fundamentals of Autoregressive and GARCH Models, and understanding volatility
- Logistic regression to predict the conditional probability of the market direction,
- Different methodologies of evaluating portfolio and strategy performance (back-testing methodologies and statistical figures for evaluation including Sharpe ratio, Sortino ratio, Max drawdown)
- Basic knowledge of Asset Allocation Models
- Understand all the most practical indicators and oscillators (e.g., RSI, MA, EMA)
- Distinguish between Macroeconomic and Microeconomic news
- Basic knowledge of models for spot prices, futures prices
- General knowledge of types of multifactor models and updating a traditional factor model
- Knowledge on the basics of the financial market in general and the stock market in particular
- A clear understanding of the type of instruments and the stock markets
- Understand the concept of the stock market index and its calculation
- Basic knowledge of machine learning, pattern recognition as well as Natural Language Processing (NLP)

MODULES

Module 1 — Sentiment: What and Whose

- Understanding investor sentiment and the pendulum of investors' emotions
- The role of "Noise Traders" in driving the asset prices in the financial markets
- Media sentiment and how it affects asset prices
- Market sentiment and its measurement
- Determining crowd sentiment and its impact on financial markets

Module 2 — Sentiment Data

- Classical newswires and macroeconomic announcements
- Various Sources of sentiment data such as news, social media, and search engines
- The impact of Micro-blogging platforms on stock markets
- Converting qualitative information to the sentiment score
- Using bag-of-words, natural language processing and lexicon-based methods in sentiment analysis

Module 3 — Structure and Coverage

- News analytics (Meta) data structure
- The exact polarity of sentiment in the news
- News characteristics such as relevance, novelty, and sentiment scores
- Leading data providers for sentiment data analysis in finance
- Description of the data provided by major sentiment vendors

Module 4 — Other Sources: Alternative Data

- Scheduled (expected) and Unscheduled (unexpected) financial news
- Macroeconomic news and their usage in automated trading
- Relevance and use of alternative data in sentiment analysis
- Major types of alternative data
- Different categories of alternative data such as satellite data, geolocation data, etc.
- Providers of alternative data

MODULES

Module 5 — Models to Exploit Sentiment Analysis (I)

- Taxonomy of models
- Descriptive, normative, prescriptive and decision models explained
- Modelling and information architecture
- Examples of modelling in the domain of finance
- The key role of time and uncertainty in decision making

Module 6 — Models to Exploit Sentiment Analysis (II)

- Financial applications of sentiment data and their properties
- Risk management through risk quantification: risk computed for exposures of varying time spans, namely, weekly, monthly, or annualized
- Fund rebalancing on calendar dates: weekly, monthly, yearly
- Automated trading daily or intraday
- Retail application (creditworthiness, loan, and savings advice)

Module 7 — Opinion and Biases

- Various challenges in the area of sentiment analysis
- Distinction between opinions and facts
- Role of behavioural finance in investor decision making
- Different types of biases that affect investor behaviour in financial markets
- Revisiting the pendulum of fear and greed

CSAF Exam

- CSAF requires you to successfully clear the Examination
- The exam is conducted in a proctored environment both at the Prometric centres in 80+ countries and remotely

CASE STUDIES

Asset Allocation Strategies: Enhanced by News

- Trading Strategy and Sentiment Analysis
- Market Data and News Meta Data Analysis
- Asset Allocation Strategy
- Construction of Filters and its applications
- Empirical Investigation

Forecasting crude oil futures prices using global macroeconomic news sentiment

- Impact of crude oil price variation
- Forecasting arbitrage-free (futures) prices
- Macroeconomic news analytic data
- Models for spot prices and futures prices
- Kalman filter and removal of noise
- Analysis, estimation, and forecasting results

Asset Allocation Strategies: Enhanced by Micro-Blog

- Trading Strategy & Sentiment Analysis
- Market Data and Micro-blog Sentiment Data
- Asset Allocation Strategy
- Construction of Filters
- Application of Filters
- Empirical Investigation and Back-testing Results

CASE STUDIES

Improved Volatility Prediction and Trading using Sentiment

- Volatility prediction
- Market Data and Micro-blog Sentiment Data
- Impact Scores from Sentiment
- GARCH & ARCH Model
- Metrics for Evaluation
- Evaluation of model performance

Equity portfolio risk estimation using market information and sentiment

- Understanding equity price uncertainty
- Update a traditional factor model
- Types of multifactor models
- Updating model volatility using quantified news
- Computational experiments

An Impact Measure for News: Its Use in (Daily) Trading Strategies

- Impact of News & Sentiment
- Designing equity trading strategies
- Return, Volatility and Liquidity Measures
- Sentiment Measure & Impact score
- Autoregressive and GARCH Models
- Experimental trading results

Prof. Christina Erlwein-Sayer

Christina Erlwein-Sayer is Professor of Statistics and Financial Mathematics at Hochschule für Technik und Wirtschaft (HTW) Berlin.

Previous to this, she worked at OptiRisk Systems as a quantitative analyst and senior researcher working on the topic of financial analytics and modelling for portfolio construction and credit risk assessment. Christina completed her PhD in Mathematics at Brunel University, London in 2008.

She then worked as a researcher and consultant in the Financial Mathematics Department at Fraunhofer ITWM, Kaiserslautern, Germany. Christina has extensive experience in research and has worked on several R&D projects, the most recent of which was a multi-million-pound project funded by EU. She has also led training workshops on the topics of financial modelling, scenario generation and regime detection.

Dr. Cristiano Arbex Valle

Dr. Valle has a bachelor's degree in Computer Science and an MSc in Operations Research from Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil. In 2011, Dr. Valle joined OptiRisk as a software engineer and a researcher.

In the year 2014 Dr. Valle obtained his PhD in the Department of Mathematical Sciences at Brunel University (UK) on the topic of optimization techniques and financial modelling.

Dr. Valle is fluent in Portuguese (his native language) as well as in English; he also has advanced knowledge in Spanish and French.

Dan Joldzic

Dan Joldzic, CFA, FRM is CEO of Alexandria Technology, Inc, which develops artificial intelligence to analyse financial news. Alexandria Technology uses machine learning to analyze and classify unstructured text.

The classification systems are trained by research analysts who work in the investment industry, allowing users to apply domain expertise and contextual understanding to large volumes of text.

Prior to joining Alexandria, Dan served dual roles as an equity portfolio manager and quantitative research analyst at Alliance Bernstein where he performed factor research to enhance the performance of equity portfolios.

Prof. Enza Messina

Enza Messina is a Professor in Operations Research at the Department of Informatics Systems and Communications, University of Milano-Bicocca, Italy, where she leads the research Laboratory MIND (Models in Decision Making and Data Analysis). She holds a PhD in Computational Mathematics and Operations Research from the University of Milano. She has developed relational classification and clustering models that find applications in different domains such as systems biology, e-justice, text mining and social network analysis. She is a co-founder of Sharper Analytics, a spin-off from the University of Milano Bicocca.

Shradha Berry

Shradha is a Data Scientist and Research Analyst at OptiRisk Systems. She has over 5 years' experience in software development with TCS, India.

Shradha has a bachelor's degree in Information Technology from Meghnad Saha Institute of Technology, Kolkata, India, and a Master's degree in Data Science and Analytics from Brunel University, London.

She holds certifications in Java, Oracle SQL and SAS; she is also competent in R and Python and analytical tools like Tableau and Power BI. Her research is focused on AI & ML applied to quant finance models for the BFSI sector. Shradha is fluent in English and Hindi (Native).

Dr. Zryan Sadik

Dr. Sadik has a bachelor's degree in Mathematics from Salahaddin University – Erbil in the Kurdistan region of Iraq. He has an MSc Degree in Computational Mathematics with Modelling, Brunel University, London (2012). Dr. Sadik completed his PhD in Applied Mathematics with a thesis on the 'Asset Price and Volatility Forecasting Using News Sentiment' at Brunel University, London (2018).

His research interests include news sentiment analysis, filtering in linear and nonlinear time series applying Kalman filters, volatility forecasting, optimization, risk assessment, and the role of news sentiment in financial markets.

His prior studies include the impact of macroeconomic news on the spot and futures prices of crude oil, and the impact of firm-specific news sentiment on the volatility of asset price returns. Dr. Sadik is fluent in Kurdish (his native language), as well as in English and Arabic.

Ravi Kashyap

Ravi Kashyap has worked in New York and Hong Kong, two leading financial markets. He gained his experience as a Product Manager and a Quantitative Strategist working for financial services companies, namely, Goldman Sachs, Morgan Stanley, Merrill Lynch, and Citigroup. His last major industry role was with IHS Markit, where he headed their quantitative products for the Asia Pacific.

In mid-2017 he switched his career to an academic pursuit in the domain of finance. He obtained his Ph.D. from the City University of Hong Kong in the area of uncertainty and unintended consequences in life and financial markets. He was a finance professor at SolBridge International School of Business, South Korea, and subsequently with SP Jain School of Global Management, Singapore.

Dr. Arkaja Chakraverty

Dr. Arkaja is a dynamic academic actively engaged in research in the domain of corporate finance and financial markets. She is experienced in investing in Indian equity derivatives, namely, futures and options. Through a number of consulting projects involving small scale enterprises (start-up companies such as — Man Capital, Clark & Kent Inc) she had been active in the industry. She received her PhD from the Indian School of Business in Financial Economics in 2017 and is affiliated with the Higher School of Economics, Moscow. Currently, she is based out of Melbourne, Australia and is working on a series of research papers. As of April 2021, Arkaja has joined the OptiRisk team as a Senior Research Associate (Consultant).

Dr. Matteo Campellone

Dr. Matteo is the co-founder and Executive Chairman of Brain, a company focused on the development of algorithms for trading strategies and investment decisions. He holds a Ph.D. in Physics and a Master in Business Administration. Dr. Matteo's past activities included Financial Modelling for financial institutions and Corporate Risk and Value-Based Management for industrial companies. As a Theoretical Physicist, he worked in the field of statistical mechanics of complex systems and of non-linear stochastic equations.

Dr. Richard Peterson

Dr. Richard Peterson is CEO of MarketPsych Data which produces psychological and macroeconomic data derived from text analytics of news and social media. MarketPsych's data is consumed by the world's largest hedge funds. Dr. Peterson is an award-winning financial writer, an associate editor of the Journal of Behavioral Finance, has published widely in academia, and performed postdoctoral neuroeconomics research at Stanford University.

Anthony Luciani

Anthony Luciani is a Senior Quantitative Analyst at MarketPsych. He is working on simplified sentiment and "Superforecasters" models. He developed sentiment-based financial models, previously for Optirisk. He has a Master's Degree in Financial Mathematics from the University of Leicester.

Prof. Gautam Mitra

Prof. Mitra is an internationally renowned research scientist in the field of Operational Research in general and computational optimization and modelling in particular. He has developed a world-class research group in his area of specialisation with researchers from Europe, UK, USA and India. He has published five books and over a hundred and fifty research articles. He is an alumnus of UCL and currently a Visiting Professor of UCL.

In 2004 he was awarded the title of 'distinguished professor' by Brunel University in recognition of his contributions in the domain of computational optimization, risk analytics and modelling.

Professor Mitra is the founder and chairman of OptiRisk Systems and UNICOM seminars. OptiRisk systems and UNICOM Seminars also have subsidiaries in India. In India and Southeast Asia both the companies are going through a period of organic growth.

A full list of his publications and academic activities can be viewed here.

ADMISSION

This programme aims to serve the participants who are equipped with high intellectual curiosity, possess a strong interest in finance and have analytical skills. This includes participants come from various quantitative disciplines such as mathematics, statistics, physical sciences, engineering, operational research, computer science, finance or economics.

COURSE DURATION

40 hours including live sessions on case studies and project work

LECTURE DURATION

3 hours every weekend over Saturday and Sunday

STANDARD PROGRAMME FEES

Global Participants: USD 3,699

Indian Residents: INR 189,900 + GST

- *Additional 18% GST applicable for Resident Indian Participants*
- *Special Discounts available for Emerging Market participants and Full-time students*
- *Financial assistance available*

LEARN MORE

FAQ

What are the course requirements?

A personal machine with good internet connection is all that is required to get started immediately. As soon as you enrol, you will be provided with learning material that will assist you through the entire duration of the programme. We recommend giving 15-20 hours per week to review and complete the course work within a period of 4 months before proceeding to the final exam.

What are the fees for this programme?

The complete fee details can be found on Pg. 16 of this brochure.

Would I get support for learning?

Yes. You would get continuous support from the Support Team throughout the programme.

Would the recordings of the lectures be provided?

Yes. Recordings of all the lectures would be made available to you on the LMS, once they are Live.

Will I get a certificate for this programme?

Yes, you would be getting a certificate from QuantInsti and Unicom, post successful completion of the programme.

What are the modules covered in this programme?

7 modules are covered in total. You can check out pages 6 and 7 of this brochure for complete details of these modules.

When will the live sessions be conducted?

The live sessions would be conducted in evening hours in IST (after 1100 GMT) over the weekend ie Saturday and Sunday.

How will the exam be conducted?

The exams would be conducted online and at Prometric centres globally. Participants can opt for either a remotely proctored exam (given they meet the pre-requisites) or write the exam at Prometric centres globally.

FAQ

What is the duration of the programme?

The duration for the programme is about 4 months. The live sessions would be conducted over the weekends (Saturday and Sunday) for this duration.

Would I get a refund if I change my mind after enrolling on the programme?

We provide an opportunity to clear all your doubts about the programme prior to enrollment. Also, you get access to dedicated team support. Therefore, we follow a no refund policy.

Can I register for EPAT and CSAF at the same time?

Yes you may register for both at the same time, provided you are confident that you can keep up with the additional training hours.

How will the lectures be conducted?

The lectures would be completely online.

Who are the faculty for this course?

You can check the complete details on pages 11 & 12 of this brochure.

Are there any case studies explained in this course?

Yes, there are 6 case studies covered. You can check pages 8 & 9 for complete details.

How to attend the sessions?

You can attend the sessions online with the link shared by the Support team to attend the lecture.

QuantInsti Quantitative Learning Pvt. Ltd.

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