SESSIONS
AI & ML SUMMIT - 02/11/2020

QuantMinds International

2 - 6 November 2020
Online virtual conference
UTC/GMT+1 Time Zone

Registration

08:30 - 09:00
AI & ML Summit

Chairman's opening remarks

09:00 - 09:05
AI & ML Summit

Deploying trading strategies using Machine Learning

09:05 - 09:35
AI & ML Summit

Participants

Andrea Nardon - Former Head of Quant, Sarasin & Partners

Short break

09:35 - 09:40
AI & ML Summit

A rough perspective on Market Generators

09:40 - 10:10
AI & ML Summit

Recent advances of deep learning applied to quantitative finance have demonstrated the potential prowess of deep learning algorithms in the context of derivatives pricing and hedging. While the neural network presented in "Deep Hedging" by Buehler at al rendered spectacular hedging performance under the assumption that the market is driven by classical stochastic models (such as the Heston model and variants thereof), the importance of a realistic market scenario generator becomes imminent: The sample paths provided to the deep hedging network in the training phase enables the latter to generate optimal hedging strategies with respect to specific risk measures. Once these hedging strategies are applied to actual market positions, the quality of the training data becomes essential, since erroneous beliefs about the market's probability distribution (unrealistic training data) can lead to large losses resulting from wrongly hedged positions. Therefore, the challenge is to design market simulators, capable not only of closely mirroring historical price movements but also of capturing the relevant market information, and generating alternative market scenarios conditional on the observed events. In this work we take a leap beyond the paradigm of classical models and present a statistically driven market simulator based on the signatures of historical path segments. That is, we generate new market scenarios using variational autoencoders, which can be conditioned on the recent asset history and on other market conditions. As one sees in the majority of (deep) neural network learning based pricing, forecasting or generative algorithms, these technologies heavily rely on the availability of large training datasets. Therefore, the particular achievement in this work is the ability to generate new samples that can be learned from a relatively small observable dataset to a high precision, and can even be conditioned on specific market indicators and market conditions.

Participants

Blanka Horvath - Research Fellow, Imperial College London

Short break

10:10 - 10:15
AI & ML Summit

Parallels between Machine Learning in Finance and Drug Discovery

10:15 - 10:45
AI & ML Summit

Why making drugs is like trading options

Participants

Oliver Watson - Founder at Evariste Technologies & Managing Partner, Tudor Investment Corporation

Morning networking break

10:45 - 11:15
AI & ML Summit

Meet the sponsors. Please use this opportunity to visit our virtual booths whilst also taking a look at the attendee list and set up 1-2-1 meetings with your fellow quants

Practical aspects of portfolio construction and risk management using machine learning

11:15 - 11:45
AI & ML Summit

Participants

Athanasios Bolmatis - Head of Quantitative Investments & Strategies, CdR Capital

Short break

11:45 - 11:50
AI & ML Summit

Beyond Backpropagation: Algorithmic Differentiation and Neural Networks

11:50 - 12:20
AI & ML Summit

We discuss recent developments of adjoint algorithmic differentiation (AAD) in the context of artificial neural networks (ANNs) including:

- AAD for learning surrogates

- pruning of ANNs using interval adjoints

- generalized Jacobian chaining

- first- and higher-order differential invariants

Participants

Uwe Naumann - Professor Of Computer Science, RWTH Aachen University

Short break

12:20 - 12:25
AI & ML Summit

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Why Causal AI Prevents Overfitting

12:25 - 12:55
AI & ML Summit

The current state of the art in machine learning relies on past patterns and correlations to make predictions of the future. This approach can work in static environments and for closed problems with fixed rules. However it does not work for financial time-series and other dynamic systems. In order to make consistently accurate predictions about the future, and to achieve true artificial intelligence, the development of new science that enables machines to understand cause and effect is required. This talk will present the power of Causal AI.

Participants

Darko Matovski - CEO, causaLens

Lunch

12:55 - 13:55
AI & ML Summit

The machine learning landscape - where have we come from and how far can we go?

13:55 - 14:25
AI & ML Summit

- Why has machine learning suddenly become so important in finance
- Key methodologies of ML
- The strengths and weaknesses of ML
- How ML is affecting the pricing and hedging of derivatives
- Other applications

Participants

John Hull - Maple Financial Professor Of Derivatives & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

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Short break

14:25 - 14:30
AI & ML Summit

Alpha Testing on Time Series: a Machine Learning Approach

14:30 - 15:00
AI & ML Summit

- Alpha testing challenges and best practices
- Dimension reduction and cross-validation techniques: how to deal with overfitting?
- What about data: combining market and alternative data
- Use cases

Participants

Sylvain Forté - CEO, SESAMm

Short break

15:00 - 15:05
AI & ML Summit

Panel: Explainable AI

15:05 - 15:45
AI & ML Summit

Unboxing the black box

Participants

Iuliia Shpak, PhD - Advisory Board Member, World Pensions Council

Darko Matovski - CEO, causaLens

Sam Livingstone - Head of Data Science, Jupiter Asset Management

Ioana Boier - Head of Quantitative Portfolio Solutions, Alphadyne Asset Management

Daniel Mayenberger - Co-Author, Upcoming book "Reverse Stress Testing in Banking" (2021) - Artificial Intelligence Applications

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Afternoon networking break

15:45 - 16:15
AI & ML Summit

Machine learning in wealth and investment management: opportunities and challenges

16:15 - 16:45
AI & ML Summit

Participants

Cristian Homescu - Director, Portfolio Analytics, Chief Investment Office, Global Wealth and Investment management GWIM, Bank of America Merrill Lynch

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Short break

16:45 - 16:50
AI & ML Summit

Application of Machine Learning in Cryptocurrency Trading

16:50 - 17:20
AI & ML Summit

Participants

Mostafa Mostafavi, PhD - Founder and Head of Machine Learning, SMM Trading Services & Researcher, Imperial College London

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Short break

17:20 - 17:25
AI & ML Summit

Artificial intelligence increases tail risk

17:25 - 17:55
AI & ML Summit

Participants

Robert Macrae - Research Associate, Systemic Risk Centre, Systemic Risk Centre

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Chair's closing remarks

17:55 - 18:00
AI & ML Summit

ML Hangout

18:00 - 19:00
ML Hangout

Network 1-2-1 with old friends and new or join our small group, content themed hang out to discuss ML with likeminded quants

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SCHEDULE
AI & ML SUMMIT - 02/11/2020

TIME	AI & ML SUMMIT	ML HANGOUT
08:00	**08:30** - Registration	
09:00	**09:00** - Chairman's opening remarks **09:05** - Deploying trading strategies using Machine Learning **09:35** - Short break **09:40** - A rough perspective on Market Generators	
10:00	**10:10** - Short break **10:15** - Parallels between Machine Learning in Finance and Drug Discovery **10:45** - Morning networking break	
11:00	**11:15** - Practical aspects of portfolio construction and risk management using machine learning **11:45** - Short break **11:50** - Beyond Backpropagation: Algorithmic Differentiation and Neural Networks	
12:00	**12:20** - Short break **12:25** - Why Causal AI Prevents Overfitting **12:55** - Lunch	
13:00	**13:55** - The machine learning landscape - where have we come from and how far can we go?	
14:00	**14:25** - Short break **14:30** - Alpha Testing on Time Series: a Machine Learning Approach	
15:00	**15:00** - Short break **15:05** - Panel: Explainable AI **15:45** - Afternoon networking break	
16:00	**16:15** - Machine learning in wealth and investment management: opportunities and challenges **16:45** - Short break **16:50** - Application of Machine Learning in Cryptocurrency Trading	
17:00	**17:20** - Short break **17:25** - Artificial intelligence increases tail risk **17:55** - Chair's closing remarks	
18:00		**18:00** - ML Hangout

SESSIONS
MAIN CONFERENCE DAY 1 - 03/11/2020

QuantMinds International

2 - 6 November 2020
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Registration & welcome coffee

08:20 - 08:50

Chairman's opening remarks

08:50 - 09:00
Plenary

What the pandemic has wrought: Political Risk in the age of Covid

09:00 - 09:30
Plenary

Participants

John Hulsman - Geopolitical Expert & Life Member, U.S. Council On Foreign Relations

Short break

09:30 - 09:45
Plenary

Hello World: Being Human in the Age of Algorithms

09:45 - 10:15
Plenary

Participants

Hannah Fry - Associate Professor in the Mathematics of Cities at the Centre for Advanced Spatial Analysis, UCL

Morning coffee & networking break

10:15 - 10:45

Chair's opening remarks

10:45 - 10:50
A: Volatility Modelling & Trading + Regulatory Developments

Participants

Matthew Rooney - Head of Quant Analytics, Selby Jennings

Chair's opening remarks

10:45 - 10:50
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Alexandre Rubesam - Professor of Finance, IESEG School of Management

Chair's opening remarks

10:45 - 10:50
C: QuantMinds Alpha Forum

Geopolitical War Game

10:45 - 12:50
D: Masterclass

Participants

John Hulsman - Geopolitical Expert & Life Member, U.S. Council On Foreign Relations

SA-CCR: the final countdown

10:50 - 11:20
A: Volatility Modelling & Trading + Regulatory Developments

Participants

Matteo Rolle - Senior Director, Head of In Business Risk, Capital and Collateral, Lloyds Banking Group

Introduction to NLP

10:50 - 11:20
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Saeed Amen - Founder, Cuemacro

New Perspectives in smart beta portfolio construction: the investment value of target price forecasts to multifactor strategies

10:50 - 11:20
C: QuantMinds Alpha Forum

The informativeness of financial analysts' stock recommendations to investors has become the subject of much scrutiny and debate. This paper investigates the investment value of target price forecasts under the specific angle of factor investing. Using target price data from 1999 to 2019 in Europe and North America, we document a decline in analysts' optimism about factors' performance and find that their forecasts are style-biased. We show that a long-only strategy that picks analysts' best-ranked stocks fails to generate materially positive risk-adjusted return and, therefore, poorly adds to a top-down multifactor strategy. However, using this information as a signal improves the performance of the momentum factor.

Participants

Hamza Bahaji - Head of Engineering and Solutions, Amundi

Short break

11:20 - 11:35
A: Volatility Modelling & Trading + Regulatory Developments

Short break

11:20 - 11:35
B: Quant Innovation & Computational and Numerical Efficiency

Short break

11:20 - 11:35
C: QuantMinds Alpha Forum

FRTB – The end of fund derivatives?

11:35 - 12:05
A: Volatility Modelling & Trading + Regulatory Developments

Participants

Alexander Giese - Managing Director, Head of Quantitative and Digital Development for Trading, UniCredit

Sustainable Finance: Climate Change Risk

11:35 - 12:05
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Wim Schoutens - Professor Of Financial Engineering, University of Leuven

Jan De Spiegeleer - Visiting Professor, KU Leuven

Predicting Intraday Risk and Liquidity with News Analytics

11:35 - 12:05
C: QuantMinds Alpha Forum

Participants

Giuliano De Rossi - Executive Director, Goldman Sachs

Short break

12:05 - 12:20
A: Volatility Modelling & Trading + Regulatory Developments

Short break

12:05 - 12:20
B: Quant Innovation & Computational and Numerical Efficiency

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Short break

12:05 - 12:20
C: QuantMinds Alpha Forum

Libor: Reform or replace? Overnight or secured?

12:20 - 12:50
A: Volatility Modelling & Trading + Regulatory Developments

Participants

Erik Vynckier - Interim Chief Executive, Foresters Friendly Society

Challenges faced when dealing with alternative data: an efficient time series and data proxy analysis

12:20 - 12:50
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Andrés Berenguer Alonso - Market Risk Director – Derivative Valuations Area, Santander

Crowding in alternative risk premium strategies

12:20 - 12:50
C: QuantMinds Alpha Forum

Participants

Zoltan Eisler - Co-Head of Execution, Capital Fund Management

Lunch & Boardroom discussion

12:50 - 13:30

Boardroom discussion with Maurits van der Meer, Portfolio Manager, PGGM on the topic **How do you apply machine learning in the context of long-only strategies?**

Moderator: Iuliia Shpak, World Pensions Council

Participants

Maurits van der Meer - Portfolio Manager, PGGM

Iuliia Shpak, PhD - Advisory Board Member, World Pensions Council

Regularized Markov regression: A unified framework and its statistical and computational guarantees

13:30 - 14:00
A: Volatility Modelling & Trading + Regulatory Developments

Participants

Michael Dempster - Professor Emeritus & Founder, Centre For Financial Research, Department Of Pure Mathematics And Statistics, University Of Cambridge

Innovations in margin modelling

13:30 - 14:00
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Udesh Jha - Managing Director, CME Group

Risk, Return, and Frequency Domain

13:30 - 14:00
C: QuantMinds Alpha Forum

Participants

Arta Babaee - Formerly Academic Visitor, Imperial College London

Short break

14:00 - 14:15
A: Volatility Modelling & Trading + Regulatory Developments

Short break

14:00 - 14:15
B: Quant Innovation & Computational and Numerical Efficiency

Short break

14:00 - 14:15
C: QuantMinds Alpha Forum

The Impact of Collateral and Stays on Financial Stability

14:15 - 14:45
A: Volatility Modelling & Trading + Regulatory Developments

We study the spread of losses and defaults in financial networks with two features: collateral requirements and resolution and bankruptcy stay rules. When collateral is committed to a firm's counterparties, a solvent firm may default if it lacks sufficient liquid assets to meet its payment obligations. Collateral requirements can thus increase the risk of contagion. Moreover, one firm may benefit from the failure of another if the failure frees collateral committed by the surviving firm, giving it additional resources to make other payments. Contract termination at default may also similarly improve the ability of other firms to meet their obligations. As a consequence of these features, the timing of payments and collateral liquidation must be carefully specified to establish the existence of payments that clear the network. Using this framework, we show that committed collateral in the form of initial margin in over-the-counter derivatives markets can increase contagion and financial instability. We also compare networks under different stay rules in OTC markets. Our analysis shows that when firms are not highly leveraged in terms of derivatives transactions, full contract termination can reduce contagion. This indicates that derivatives stays may not improve financial stability.

Participants

Samim Ghamami - Senior Economist and Managing Director, Financial Services Forum

Black Basket Analytics for Mid-Curves and Spread-Options

14:15 - 14:45
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Alexandre Antonov - Chief Analyst, Danske Bank

Modeling Causality for Quantitative Finance

14:15 - 14:45
C: QuantMinds Alpha Forum

Participants

Ioana Boier - Head of Quantitative Portfolio Solutions, Alphadyne Asset Management

Short break

14:45 - 15:00
A: Volatility Modelling & Trading + Regulatory Developments

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Short break

14:45 - 15:00
B: Quant Innovation & Computational and Numerical Efficiency

Short break

14:45 - 15:00
C: QuantMinds Alpha Forum

ADOL - Markovian approximation of rough lognormal model

15:00 - 15:30
A: Volatility Modelling & Trading + Regulatory Developments

Participants

Andrey Itkin - Director, Senior Research Associate, Bank Of America Merrill Lynch

Large-Scale and Cost-Efficient Risk Calculations in Clouds

15:00 - 15:30
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Oliver Caps - Director, Product Owner Market Risk Analytics, Commerzbank

Smart Diversification of 60/40 Portfolios: fundamentals and long-term analysis

15:00 - 15:30
C: QuantMinds Alpha Forum

· Portfolio optimization accounting for tail risk

· Regime-conditional factor model for risk decomposition

· Trend-following strategies and safe-haven assets as risk-mitigating strategies

· Long-term analysis from 1960s

Participants

Artur Sepp - Director of Research, Quantica Capital AG

Afternoon break & Boardroom Discussion

15:30 - 16:00

Boardroom discussion with Wim Schoutens, University of Leuven on the topic **The Impact of Climate Change on Investing and Risk-management.**

Moderated by Jan De Spiegeleer, University of Leuven

Participants

Wim Schoutens - Professor Of Financial Engineering, University of Leuven

Jan De Spiegeleer - Visiting Professor, KU Leuven

Bermudian Optionality

16:00 - 16:30
A: Volatility Modelling & Trading + Regulatory Developments

Participants

Peter Carr - Department Chair, Finance and Risk Engineering, NYU Tandon School

Deep Pricing Theory and Practice

16:00 - 16:30
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Youssef Elouerkhaoui - Managing Director And Global Head Of Credit & Commodities Quantitative Analysis, Citigroup

Panel: Extracting alpha through quantitative finance

16:00 - 16:30
C: QuantMinds Alpha Forum

Participants

Arta Babaee - Formerly Academic Visitor, Imperial College London

Yuri Lobyntsev - Co-founder & CTO, Cindicator Capital

Kostas Iordanidis - Managing Partner, KI Capital

Abhijeet Gaikwad - Managing Director, Trium Capital

Short break

16:30 - 16:45
A: Volatility Modelling & Trading + Regulatory Developments

Short break

16:30 - 16:45
B: Quant Innovation & Computational and Numerical Efficiency

Short break

16:30 - 16:45
C: QuantMinds Alpha Forum

Local Volatility in Multi Dimensions

16:45 - 17:15
A: Volatility Modelling & Trading + Regulatory Developments

· Multi asset arbitrage
· Minimal multi asset models and arbitrage
· Discrete time minimal model and calibration by Monte-Carlo
· Applications to foreign exchange, interest rates and equities

Participants

Jesper Andreasen - Kwant Daddy, SaxoBank

Quantum Machine Learning

16:45 - 17:15
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Alexei Kondratyev - Managing Director, Global Head of Data Analytics, CCIB, Standard Chartered Bank

From Smart Betas to Smart Alphas

16:45 - 17:15
C: QuantMinds Alpha Forum

Participants

Milind Sharma - CEO, QuantZ Capital Management & QMIT

Short break

17:15 - 17:30
A: Volatility Modelling & Trading + Regulatory Developments

Short break

17:15 - 17:30
B: Quant Innovation & Computational and Numerical Efficiency

Short break

17:15 - 17:30
C: QuantMinds Alpha Forum

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Special Session on the Joint SPX/VIX Smile Calibration Problem

17:30 - 18:45
A: Volatility Modelling & Trading + Regulatory Developments

Participants

Julien Guyon - Senior Quant, Bloomberg L.P.

Mathieu Rosenbaum - Professor, Ecole Polytechnique

Cloud GPUs for Risk Calculations

17:30 - 18:00
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Andrew Green - Managing Director and XVA Lead Quant, Scotiabank

Learning non-linear relationships in the cross-section: a machine learning approach to factor investing

17:30 - 18:00
C: QuantMinds Alpha Forum

Participants

Valerio Sperandeo - Senior Application Engineer, MathWorks

Ricardo Pachon Cortes - Vice President, Credit Suisse

Short break

18:00 - 18:15
B: Quant Innovation & Computational and Numerical Efficiency

Short break

18:00 - 18:15
C: QuantMinds Alpha Forum

Leveraging cloud to speed up calculations

18:15 - 18:45
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Remo Minero - Head of Quant Development, NN Group

Volatility Targeting

18:15 - 18:45
C: QuantMinds Alpha Forum

Participants

George Mylnikov - Vice President, Head of Quantitative Research, Charles Schwab Investment Management

Chair's closing remarks

18:45 - 18:55
A: Volatility Modelling & Trading + Regulatory Developments

Chair's closing remarks

18:45 - 18:55
B: Quant Innovation & Computational and Numerical Efficiency

Participants

Alexandre Rubesam - Professor of Finance, IESEG School of Management

Chair's closing remarks

18:45 - 18:55
C: QuantMinds Alpha Forum

Volatility Hangout

18:55 - 20:00
Volatility Hangout

Network 1-2-1 with old friends and new or join our small group, content themed hang out to discuss topics that matter to you with likeminded quants

Quant Innovation Hangout

18:55 - 20:00
Quant Innovation Hangout

Network 1-2-1 with old friends and new or join our small group, content themed hang out to discuss topics that matter to you with likeminded quants

Alpha Hangout

18:55 - 20:00
Alpha Hangout

Network 1-2-1 with old friends and new or join our small group, content themed hang out to discuss topics that matter to you with likeminded quants

US Election hangout

18:55 - 20:00
US Election Hangout

Network 1-2-1 with old friends and new or join our small group, content themed hang out to discuss topics that matter to you with likeminded quants

End of main conference day 1

20:00 - 20:05

SCHEDULE
MAIN CONFERENCE DAY 1 - 03/11/2020

TIME	A: VOLATILITY MODELLING & TRADING + REGULATORY DEVELOPMENTS	ALPHA HANGOUT	B: QUANT INNOVATION & COMPUTATIONAL AND NUMERICAL EFFICIENCY	C: QUANTMINDS ALPHA FORUM	D: MASTERCLASS	PLENARY	QUANT INNOVATION HANGOUT	US ELECTION HANGOUT	VOLATILITY HANGOUT
08:00	**08:20** - Registration & welcome coffee	**08:20** - Registration & welcome coffee	**08:20** - Registration & welcome coffee	**08:20** - Registration & welcome coffee	**08:20** - Registration & welcome coffee	**08:20** - Registration & welcome coffee **08:50** - Chairman's opening remarks	**08:20** - Registration & welcome coffee	**08:20** - Registration & welcome coffee	**08:20** - Registration & welcome coffee
09:00						**09:00** - What the pandemic has wrought: Political Risk in the age of Covid **09:30** - Short break **09:45** - Hello World: Being Human in the Age of Algorithms			

SCHEDULE
MAIN CONFERENCE DAY 1 - 03/11/2020

TIME	A: VOLATILITY MODELLING & TRADING + REGULATORY DEVELOPMENTS	ALPHA HANGOUT	B: QUANT INNOVATION & COMPUTATIONAL AND NUMERICAL EFFICIENCY	C: QUANTMINDS ALPHA FORUM	D: MASTERCLASS	PLENARY	QUANT INNOVATION HANGOUT	US ELECTION HANGOUT	VOLATILITY HANGOUT
10:00	**10:15** - Morning coffee & networking break **10:45** - Chair's opening remarks **10:50** - SA-CCR: the final countdown	**10:15** - Morning coffee & networking break	**10:15** - Morning coffee & networking break **10:45** - Chair's opening remarks **10:50** - Introduction to NLP	**10:15** - Morning coffee & networking break **10:45** - Chair's opening remarks **10:50** - New Perspectives in smart beta portfolio construction: the investment value of target price forecasts to multifactor strategies	**10:15** - Morning coffee & networking break **10:45** - Geopolitical War Game	**10:15** - Morning coffee & networking break	**10:15** - Morning coffee & networking break	**10:15** - Morning coffee & networking break	**10:15** - Morning coffee & networking break
11:00	**11:20** - Short break **11:35** - FRTB – The end of fund derivatives?		**11:20** - Short break **11:35** - Sustainable Finance: Climate Change Risk	**11:20** - Short break **11:35** - Predicting Intraday Risk and Liquidity with News Analytics					

SCHEDULE
MAIN CONFERENCE DAY 1 - 03/11/2020

TIME	A: VOLATILITY MODELLING & TRADING + REGULATORY DEVELOPMENTS	ALPHA HANGOUT	B: QUANT INNOVATION & COMPUTATIONAL AND NUMERICAL EFFICIENCY	C: QUANTMINDS ALPHA FORUM	D: MASTERCLASS	PLENARY	QUANT INNOVATION HANGOUT	US ELECTION HANGOUT	VOLATILITY HANGOUT
12:00	**12:05** - Short break **12:20** - Libor: Reform or replace? Overnight or secured? **12:50** - Lunch & Boardroom discussion	**12:50** - Lunch & Boardroom discussion	**12:05** - Short break **12:20** - Challenges faced when dealing with alternative data: an efficient time series and data proxy analysis **12:50** - Lunch & Boardroom discussion	**12:05** - Short break **12:20** - Crowding in alternative risk premium strategies **12:50** - Lunch & Boardroom discussion	**12:50** - Lunch & Boardroom discussion	**12:50** - Lunch & Boardroom discussion	**12:50** - Lunch & Boardroom discussion	**12:50** - Lunch & Boardroom discussion	**12:50** - Lunch & Boardroom discussion
13:00	**13:30** - Regularized Markov regression: A unified framework and its statistical and computational guarantees		**13:30** - Innovations in margin modelling	**13:30** - Risk, Return, and Frequency Domain					
14:00	**14:00** - Short break **14:15** - The Impact of Collateral and Stays on Financial Stability **14:45** - Short break		**14:00** - Short break **14:15** - Black Basket Analytics for Mid-Curves and Spread-Options **14:45** - Short break	**14:00** - Short break **14:15** - Modeling Causality for Quantitative Finance **14:45** - Short break					

SCHEDULE
MAIN CONFERENCE DAY 1 - 03/11/2020

TIME	A: VOLATILITY MODELLING & TRADING + REGULATORY DEVELOPMENTS	ALPHA HANGOUT	B: QUANT INNOVATION & COMPUTATIONAL AND NUMERICAL EFFICIENCY	C: QUANTMINDS ALPHA FORUM	D: MASTERCLASS	PLENARY	QUANT INNOVATION HANGOUT	US ELECTION HANGOUT	VOLATILITY HANGOUT
15:00	**15:00** - ADOL - Markovian approximation of rough log-normal model **15:30** - Afternoon break & Boardroom Discussion	**15:30** - Afternoon break & Boardroom Discussion	**15:00** - Large-Scale and Cost-Efficient Risk Calculations in Clouds **15:30** - Afternoon break & Boardroom Discussion	**15:00** - Smart Diversification of 60/40 Portfolios: fundamentals and long-term analysis **15:30** - Afternoon break & Boardroom Discussion	**15:30** - Afternoon break & Boardroom Discussion	**15:30** - Afternoon break & Boardroom Discussion	**15:30** - Afternoon break & Boardroom Discussion	**15:30** - Afternoon break & Boardroom Discussion	**15:30** - Afternoon break & Boardroom Discussion
16:00	**16:00** - Bermudian Optionality **16:30** - Short break **16:45** - Local Volatility in Multi Dimensions		**16:00** - Deep Pricing Theory and Practice **16:30** - Short break **16:45** - Quantum Machine Learning	**16:00** - Panel: Extracting alpha through quantitative finance **16:30** - Short break **16:45** - From Smart Betas to Smart Alphas					
17:00	**17:15** - Short break **17:30** - Special Session on the Joint SPX/VIX Smile Calibration Problem		**17:15** - Short break **17:30** - Cloud GPUs for Risk Calculations	**17:15** - Short break **17:30** - Learning non-linear relationships in the cross-section: a machine learning approach to factor investing					

SCHEDULE
MAIN CONFERENCE DAY 1 - 03/11/2020

TIME	A: VOLATILITY MODELLING & TRADING + REGULATORY DEVELOPMENTS	ALPHA HANGOUT	B: QUANT INNOVATION & COMPUTATIONAL AND NUMERICAL EFFICIENCY	C: QUANTMINDS ALPHA FORUM	D: MASTERCLASS	PLENARY	QUANT INNOVATION HANGOUT	US ELECTION HANGOUT	VOLATILITY HANGOUT
18:00	**18:45** - Chair's closing remarks	**18:55** - Alpha Hangout	**18:00** - Short break **18:15** - Leveraging cloud to speed up calculations **18:45** - Chair's closing remarks	**18:00** - Short break **18:15** - Volatility Targeting **18:45** - Chair's closing remarks			**18:55** - Quant Innovation Hangout	**18:55** - US Election hangout	**18:55** - Volatility Hangout
19:00									
20:00	**20:00** - End of main conference day 1	**20:00** - End of main conference day 1	**20:00** - End of main conference day 1	**20:00** - End of main conference day 1	**20:00** - End of main conference day 1	**20:00** - End of main conference day 1	**20:00** - End of main conference day 1	**20:00** - End of main conference day 1	**20:00** - End of main conference day 1

SESSIONS
MAIN CONFERENCE DAY 2 - 04/11/2020

QuantMinds International

2 - 6 November 2020
Online virtual conference
UTC/GMT+1 Time Zone

Registration & welcome coffee

08:30 - 08:55

Chair's opening remarks

08:55 - 09:00
A: Option pricing & volatility

Participants

Leif Andersen - Global Co-Head Of Quantitative Strategies Group, Bank Of America Merrill Lynch

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Chair's opening remarks

08:55 - 09:00
B: Quant 2.0: Being A Quant In The New Era

Participants

Andrey Chirikhin - Head of Structured Credit Quantitative Analytics, Barclays Investment Bank

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Chair's opening remarks

08:55 - 09:00
C: Interest rate & IBOR

Deep Analytics

08:55 - 09:40
D: Masterclass

Participants

Antoine Savine - Quantitative Research , Danske Bank

Brian Huge - Chief Quantitative Analyst, Danske Bank

Pricing of Digital exotic Options by Monte Carlo

09:00 - 09:30
A: Option pricing & volatility

Participants

Julien Hok - Quantitative Analyst, INVESTEC Bank

Panel: How is technology and regulation affecting the quant role?

09:00 - 09:30
B: Quant 2.0: Being A Quant In The New Era

Participants

Nadhem Meziou - Head of Fixed Income Quantitative Research, Natixis

Samim Ghamami - Senior Economist and Managing Director, Financial Services Forum

Christoph Burgard - Head of Risk Analytics For Global Markets, Bank of America Merrill Lynch

Massimo Morini - Head of Interest Rate and Credit Models, Banca IMI

Andrey Chirikhin - Head of Structured Credit Quantitative Analytics, Barclays Investment Bank

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Discounting big-bang: convexity adjustment

09:00 - 09:30
C: Interest rate & IBOR

* Collateral big bang: theoretical clean process

* Collateral big bang: practical dirty process

* Convexity adjustment: forwarding big bang

Participants

Marc Henrard - Visiting Professor, University College London

Short break

09:30 - 09:45
A: Option pricing & volatility

Short break

09:30 - 09:45
B: Quant 2.0: Being A Quant In The New Era

Short break

09:30 - 09:45
C: Interest rate & IBOR

Deep learning calibration of option pricing models: some pitfalls, solutions and examples

09:45 - 10:15
A: Option pricing & volatility

Participants

Andrey Itkin - Director, Senior Research Associate, Bank Of America Merrill Lynch

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Tackling nonlinear high dimensional problems in finance with low rank tensor techniques and deep neural networks

09:45 - 10:15
B: Quant 2.0: Being A Quant In The New Era

Participants

Kathrin Glau - FELLOW co-founded by Marie Skłodowska Curie at École Polytechnique Fédérale de Lausanne & Financial Mathematics, Queen Mary University of London

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Modelling framework for term rates replacing LIBOR

09:45 - 10:15
C: Interest rate & IBOR

Participants

Maurizio Garro - Senior Lead - IBOR Transition programme, Lloyds Bank

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Short break

10:15 - 10:30
A: Option pricing & volatility

Short break

10:15 - 10:30
B: Quant 2.0: Being A Quant In The New Era

Short break

10:15 - 10:30
C: Interest rate & IBOR

Arc-sine Law and the Libor Reform

10:30 - 11:00
A: Option pricing & volatility

Participants

Vladimir Piterbarg - MD, Head of Quantitative Analytics and Quantitative Development, NatWest Markets

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Explaining AI - Theory and Practice

10:30 - 11:00
B: Quant 2.0: Being A Quant In The New Era

Participants

Daniel Mayenberger - Co-Author, Upcoming book "Reverse Stress Testing in Banking" (2021) - Artificial Intelligence Applications

SESSIONS
MAIN CONFERENCE DAY 2 - 04/11/2020

Efficient pricing of rates and hybrid derivatives post-Libor

10:30 - 11:00
C: Interest rate & IBOR

Participants

Colin Turfus - Quantitative Analyst, Deutsche Bank

Morning networking break

11:00 - 11:30

Meet the sponsors. Please use this opportunity to visit our virtual booths whilst also taking a look at the attendee list and set up 1-2-1 meetings with your fellow quants

Hybrid Monte Carlo-FEM method: a new way to solve complex pricing problems

11:30 - 12:00
A: Option pricing & volatility

Participants

Angel Rodriguez-Rozas - Associate Director – Quantitative Analyst, Model Validation, Banco Santander

Incorporating Negative Prices and Strikes into the Black Model

11:30 - 12:00
B: Quant 2.0: Being A Quant In The New Era

Participants

Richard Martin - Independent, Trader

Convexity with collateral for Stochastic Libor-OIS/SOFR spreads, a semi-analytic approach

11:30 - 12:00
C: Interest rate & IBOR

Participants

Emiliano Papa - Director - Head of Rates and FX, Deutsche Bank

Short break

12:00 - 12:15
A: Option pricing & volatility

Short break

12:00 - 12:15
B: Quant 2.0: Being A Quant In The New Era

Short break

12:00 - 12:15
C: Interest rate & IBOR

The right kind of volatility

12:15 - 12:45
A: Option pricing & volatility

Participants

Marcos Costa Santos Carreira - PhD Candidate, École Polytechnique

Explainable Artificial Intelligence for Quantitative Finance

12:15 - 12:45
B: Quant 2.0: Being A Quant In The New Era

Participants

Fabien Choujaa - Global Head of Algorithmic Trading Model Risk Management, Morgan Stanley

Swaptions Modelling in a Risk-Free Rate framework

12:15 - 12:45
C: Interest rate & IBOR

Participants

Dominique Bang - Director, Bank of America Merrill Lynch

Short break

12:45 - 13:00
A: Option pricing & volatility

Short break

12:45 - 13:00
B: Quant 2.0: Being A Quant In The New Era

Short break

12:45 - 13:00
C: Interest rate & IBOR

The mathematics of cumulants, diamonds and forests

13:00 - 13:30
A: Option pricing & volatility

Participants

Peter Friz - Professor of Mathematics, TU Berlin, Weierstraß-Institut Berlin

Quants, Quantum Mechanics and Quantos

13:00 - 13:30
B: Quant 2.0: Being A Quant In The New Era

Participants

Luca Capriotti - Head of Quantitative Strategies Credit, Credit Suisse

Modelling Interest Rate and FX Derivatives with Division Algebras

13:00 - 13:30
C: Interest rate & IBOR

Participants

Gregory Pelts - Quant, Wells Fargo & Co

Lunch

13:30 - 14:30

Diamond trees and the forest expansion

14:30 - 15:00
A: Option pricing & volatility

Participants

Jim Gatheral - Presidential Professor of Mathematics, Baruch College, CUNY

Using machine learning for risk monitoring and VaR calculations

14:30 - 15:00
B: Quant 2.0: Being A Quant In The New Era

Participants

Peter Quell - Head of Portfolio Analytics Team for Market & Credit Risk, DZ BANK

Part 1: Looking Forward to Backward-Looking Rates: Completing the Generalized Forward Market Model

14:30 - 15:00
C: Interest rate & IBOR

Participants

Fabio Mercurio - Global Head of Quant Analytics, Bloomberg L.P.

Andrei Lyashenko - Head of Market Risk and Pricing Models, Quantitative Risk Management (QRM), Inc.

Short break

15:00 - 15:15
A: Option pricing & volatility

Short break

15:00 - 15:15
B: Quant 2.0: Being A Quant In The New Era

Short break

15:00 - 15:15
C: Interest rate & IBOR

SESSIONS
MAIN CONFERENCE DAY 2 - 04/11/2020

QuantMinds International

2 - 6 November 2020
Online virtual conference
UTC/GMT+1 Time Zone

A new framework for the static replication of single- and multi-asset European options

15:15 - 15:45
A: Option pricing & volatility

Participants

Sebastien Bossu - Principal, Ogee Group LLC

Designing modern, scalable and cloud ready pricing platforms

15:15 - 15:45
B: Quant 2.0: Being A Quant In The New Era

Participants

Holger Plank - Partner, d-fine

Wjatscheslaw Kewlin - Senior Consultant, d-fine

Part 2: Looking Forward to Backward-Looking Rates: Completing the Generalized Forward Market Model

15:15 - 15:45
C: Interest rate & IBOR

Participants

Fabio Mercurio - Global Head of Quant Analytics, Bloomberg L.P.

Andrei Lyashenko - Head of Market Risk and Pricing Models, Quantitative Risk Management (QRM), Inc.

Short break

15:45 - 16:00
A: Option pricing & volatility

Short break

15:45 - 16:00
B: Quant 2.0: Being A Quant In The New Era

Short break

15:45 - 16:00
C: Interest rate & IBOR

The Beauty and Power of Forward Equations

16:00 - 16:30
A: Option pricing & volatility

Participants

Bruno Dupire - Head Of Quantitative Research, Bloomberg L.P.

Bias Reducing Optimization Techniques for Neural Nets

16:00 - 16:30
B: Quant 2.0: Being A Quant In The New Era

Participants

Tyler Ward - Local Search Modeler, Virtu Financial

Tenor Basis Flow

16:00 - 16:30
C: Interest rate & IBOR

Participants

Andrew McClelland - SVP, Quantitative Research, Numerix

Chair's closing remarks

16:30 - 16:35
A: Option pricing & volatility

Participants

Leif Andersen - Global Co-Head Of Quantitative Strategies Group, Bank Of America Merrill Lynch

Chair's closing remarks

16:30 - 16:35
B: Quant 2.0: Being A Quant In The New Era

Participants

Andrey Chirikhin - Head of Structured Credit Quantitative Analytics, Barclays Investment Bank

Chair's closing remarks

16:30 - 16:35
C: Interest rate & IBOR

Short break

16:35 - 16:50

Deep learning for hedging

16:50 - 17:30

- A new tool for hedging: reinforcement learning
- When is it applicable? What does it achieve?
- Using reinforcement learning in conjunction with neural networks
- Cash flow vs. P&L approach
- Sample results

Participants

John Hull - Maple Financial Professor Of Derivatives & Risk Management, Joseph L. Rotman School of Management, University Of Toronto

Zissis Poulos - Postdoctoral fellow at the Joseph L. Rotman School of Management & researcher, Rotman Financial Innovation Hub (FinHub), University of Toronto

Networking & Roundtable Discussion

17:30 - 19:00

1) Arbitrage-free Parametric Volatility Surfaces with Michael Konikov

Participants

Michael Konikov - SVP, Head of Quantitative Development, Numerix

End of main conference day 2

19:00 - 19:05

SCHEDULE
MAIN CONFERENCE DAY 2 - 04/11/2020

TIME	A: OPTION PRICING & VOLATILITY	B: QUANT 2.0: BEING A QUANT IN THE NEW ERA	C: INTEREST RATE & IBOR	D: MASTERCLASS
08:00	**08:30** - Registration & welcome coffee **08:55** - Chair's opening remarks	**08:30** - Registration & welcome coffee **08:55** - Chair's opening remarks	**08:30** - Registration & welcome coffee **08:55** - Chair's opening remarks	**08:30** - Registration & welcome coffee **08:55** - Deep Analytics
09:00	**09:00** - Pricing of Digital exotic Options by Monte Carlo **09:30** - Short break **09:45** - Deep learning calibration of option pricing models: some pitfalls, solutions and examples	**09:00** - Panel: How is technology and regulation affecting the quant role? **09:30** - Short break **09:45** - Tackling nonlinear high dimensional problems in finance with low rank tensor techniques and deep neural networks	**09:00** - Discounting big-bang: convexity adjustment **09:30** - Short break **09:45** - Modelling framework for term rates replacing LIBOR	
10:00	**10:15** - Short break **10:30** - Arc-sine Law and the Libor Reform	**10:15** - Short break **10:30** - Explaining AI - Theory and Practice	**10:15** - Short break **10:30** - Efficient pricing of rates and hybrid derivatives post-Libor	
11:00	**11:00** - Morning networking break **11:30** - Hybrid Monte Carlo-FEM method: a new way to solve complex pricing problems	**11:00** - Morning networking break **11:30** - Incorporating Negative Prices and Strikes into the Black Model	**11:00** - Morning networking break **11:30** - Convexity with collateral for Stochastic Libor-OIS/SOFR spreads, a semi-analytic approach	**11:00** - Morning networking break
12:00	**12:00** - Short break **12:15** - The right kind of volatility **12:45** - Short break	**12:00** - Short break **12:15** - Explainable Artificial Intelligence for Quantitative Finance **12:45** - Short break	**12:00** - Short break **12:15** - Swaptions Modelling in a Risk-Free Rate framework **12:45** - Short break	
13:00	**13:00** - The mathematics of cumulants, diamonds and forests **13:30** - Lunch	**13:00** - Quants, Quantum Mechanics and Quantos **13:30** - Lunch	**13:00** - Modelling Interest Rate and FX Derivatives with Division Algebras **13:30** - Lunch	**13:30** - Lunch
14:00	**14:30** - Diamond trees and the forest expansion	**14:30** - Using machine learning for risk monitoring and VaR calculations	**14:30** - Part 1: Looking Forward to Backward-Looking Rates: Completing the Generalized Forward Market Model	

SCHEDULE
MAIN CONFERENCE DAY 2 - 04/11/2020

TIME	A: OPTION PRICING & VOLATILITY	B: QUANT 2.0: BEING A QUANT IN THE NEW ERA	C: INTEREST RATE & IBOR	D: MASTERCLASS
15:00	**15:00** - Short break **15:15** - A new framework for the static replication of single- and multi-asset European options **15:45** - Short break	**15:00** - Short break **15:15** - Designing modern, scalable and cloud ready pricing platforms **15:45** - Short break	**15:00** - Short break **15:15** - Part 2: Looking Forward to Backward-Looking Rates: Completing the Generalized Forward Market Model **15:45** - Short break	
16:00	**16:00** - The Beauty and Power of Forward Equations **16:30** - Chair's closing remarks **16:35** - Short break **16:50** - Deep learning for hedging	**16:00** - Bias Reducing Optimization Techniques for Neural Nets **16:30** - Chair's closing remarks **16:35** - Short break **16:50** - Deep learning for hedging	**16:00** - Tenor Basis Flow **16:30** - Chair's closing remarks **16:35** - Short break **16:50** - Deep learning for hedging	**16:35** - Short break **16:50** - Deep learning for hedging
17:00	**17:30** - Networking & Roundtable Discussion	**17:30** - Networking & Roundtable Discussion	**17:30** - Networking & Roundtable Discussion	**17:30** - Networking & Roundtable Discussion
18:00				
19:00	**19:00** - End of main conference day 2	**19:00** - End of main conference day 2	**19:00** - End of main conference day 2	**19:00** - End of main conference day 2

SESSIONS
MAIN CONFERENCE DAY 3 - 05/11/2020

QuantMinds International

2 - 6 November 2020
Online virtual conference
UTC/GMT+1 Time Zone

Registration & welcome coffee

08:30 - 09:00

Chair's opening remarks

09:00 - 09:05
Plenary

Machine learning: Separating fact from fiction

09:05 - 09:45
Plenary

Participants

Marcos López de Prado - Global Head - Quantitative Research & Development, ABU DHABI INVESTMENT AUTHORITY

Short break

09:45 - 10:00
Plenary

Lessons on Decision Making from a Poker Champion

10:00 - 10:30
Plenary

Participants

Liv Boeree - Poker Champion, Strategic Thinker, Broadcaster & Founder, Raising for Effective Giving

Short break

10:30 - 10:45
Plenary

How can Formula 1 help?

10:45 - 11:15
Plenary

Participants

Peter van Manen - Former Managing Director, McLaren Applied Technologies Limited

Morning networking break

11:15 - 11:45

Meet the sponsors. Please use this opportunity to visit our virtual booths whilst also taking a look at the attendee list and set up 1-2-1 meetings with your fellow quants

Chairs opening remarks

11:45 - 11:50
A: FX, Commodities & Trading Innovations

Chair's opening remarks

11:45 - 11:50
B: Risk Management & Liquidity

Chair's opening remarks

11:45 - 11:50
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

One Step Forwards, One Step Back: Exact PDE Solvers and Stable Trees

11:50 - 12:20
A: FX, Commodities & Trading Innovations

We show how to set up finite difference schemes so that vanilla options are exactly repriced, and discuss some of the consequences for exotic derivative pricing

Participants

Peter Austing - Quantitative Researcher, Eisler Capital

Excursion risk: a new approach to risk analysis of dynamic trading strategies

11:50 - 12:20
B: Risk Management & Liquidity

Participants

Rama Cont - Chair of Mathematical Finance, University of Oxford

Applications of machine learning to portfolio allocation

11:50 - 12:20
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

Participants

Richard Turner - Head of Research, Currency Alpha, Mesirow Financial

Short break

12:20 - 12:35
A: FX, Commodities & Trading Innovations

Short break

12:20 - 12:35
B: Risk Management & Liquidity

Short break

12:20 - 12:35
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

Fourier-based methods for the management of complex insurance products

12:35 - 13:05
A: FX, Commodities & Trading Innovations

Participants

Laura Ballotta - Reader in Financial Mathematics, Cass Business School

Pricing & hedging under uncertainty

12:35 - 13:05
B: Risk Management & Liquidity

- Pricing biases & uncertainty sources
- Cost of calibration change
- Frictions & asymmetric pricing
- P&L breakeven analysis & Greek averaging
- Dynamics risk & conservative adjustments

Participants

Nadhem Meziou - Head of Fixed Income Quantitative Research, Natixis

Quantitative Investment Strategies – Where to look next?

12:35 - 13:05
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

Participants

Sandrine Ungari - Head of Cross-Asset Quantitative Research, SGCIB

Lunch

13:05 - 14:00
A: FX, Commodities & Trading Innovations

Lunch

13:05 - 14:00
B: Risk Management & Liquidity

Lunch

13:05 - 14:00
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

Opportunities in FI/FX hedging with the cross currency basis

14:00 - 14:30
A: FX, Commodities & Trading Innovations

Participants

Jessica James - Managing Director, Senior Quantitative Researcher, Commerzbank AG

SESSIONS
MAIN CONFERENCE DAY 3 - 05/11/2020

QuantMinds International

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Risk Parity in a Regime Switching Context

14:00 - 14:30
B: Risk Management & Liquidity

Participants

Chris Kelliher - Quantitative Analyst, Global Asset Allocation team, Fidelity Investments

Bond curve modelling

14:00 - 14:30
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

Participants

Paul McCloud - Head of Global Fixed Income Quantitative Research', Nomura

Short break

14:30 - 14:45
A: FX, Commodities & Trading Innovations

Short break

14:30 - 14:45
B: Risk Management & Liquidity

Short break

14:30 - 14:45
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

A Lognormal Type Stochastic Volatility Model With Quadratic Drift

14:45 - 15:15
A: FX, Commodities & Trading Innovations

Participants

Sander Willems - Quantitative Analyst, NatWest Markets

IM forecast quality: certain uncertainties and uncertain certainties

14:45 - 15:15
B: Risk Management & Liquidity

Participants

Vladimir Chorniy - Senior Technical Lead, BNP Paribas

Sergii Arkhypov - Risk Specialist, .

Yield Curve Forecasting: Aspects of Mathematical Finance and Computational Statistics

14:45 - 15:15
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

Participants

Daniel Zimarev - Financial Engineer, UBS Investment Bank

Short break

15:15 - 15:30
A: FX, Commodities & Trading Innovations

Short break

15:15 - 15:30
B: Risk Management & Liquidity

Short break

15:15 - 15:30
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

Modeling Energy Forward Curves in the Framework of the Reproducing Kernel Hilbert Spaces

15:30 - 16:00
A: FX, Commodities & Trading Innovations

- Modeling energy forward curves as the minimum norm recovery problem in reproducing kernel Hilbert spaces
- The machine learning framework
- Comparing with the parametric modeling of energy forward curves in the Non-Markovian approach
- Examples of the crude oil, natural gas, power and emission markets

Participants

Valery Kholodnyi - Pauli Fellow, Wolfgang Pauli Institute

Full Probabilistic Control for Direct, Robust, Systematic and Targeted Stressing of the Correlation Matrix

15:30 - 16:00
B: Risk Management & Liquidity

In practice, risk measurement of the majority of enterprise-level portfolios, and even many investment portfolios, requires stressing the correlation matrix directly, rather than (solely) stressing its underlying variables, due to 1. data paucity or incomplete time series, 2. matrices where at least some of the values are based on subject-matter expertise, and/or 3. the need to specify and test the effects of correlation values nowhere close to those reflected in historical data (i.e. the majority of extreme scenarios used in forward-looking stress testing). Surprisingly few papers in the literature address this common, real-world situation, and their approaches arguably are either ad-hoc, lack solid statistical underpinnings, do not allow for direct, probability-based stressing, and/or remain non-robust as they fail under empirically challenging conditions (e.g. near-zero eigenvalues resulting from the need to first enforce positive definiteness of the matrix). We borrow from recent advances in the literature for generating random correlation matrices (based on the identity matrix) to design a method that both mitigates and eliminates these drawbacks when directly stressing real-world correlation matrices (other than the identity matrix). Our approach can be used for both generalized and targeted stressing. The former perturbs the entire correlation matrix, which can be used to account for difficult-to-model or difficult-to-anticipate second and third order effects of extreme scenarios, as well as providing much needed percentiles of the distribution of the entire matrix. Targeted stressing, on the other hand, allows for particular correlation values to be changed by specified amounts based directly on the probability of observing such changes due to the event/scenario. And both generalized and targeted stressing can be performed concurrently, based on the same proposed approach, which provides full probabilistic control while automatically enforcing positive definiteness. We demonstrate the method on realistic, reasonably large matrices (100x100) that have had positive definiteness enforced via Higham (2002), reflecting a common occurrence for most enterprise-level portfolios and even many investment portfolios. Although it requires numeric integration (or alternatively, fast and accurate calculations of Gauss hypergeometric functions) for all but very small matrices, our approach's runtimes are comparable to those of competing methods. Implementation is straightforward, and results robustly outperform existing methods in the literature, especially when matrices are empirically challenging (e.g. near-zero eigenvalues).

Participants

J.D. Opdyke - VP-Head of Enterprise Risk Analytics, Allstate

SESSIONS
MAIN CONFERENCE DAY 3 - 05/11/2020

QuantMinds International

2 - 6 November 2020
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Interpretable ML for fundamental analysis during extreme event

15:30 - 16:00
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

Participants

Maxim Kartamyshev - Quant, Norges Bank Investment Management

Afternoon networking break & Boardroom Discussion

16:00 - 16:30

Boardroom discussion with Jeanine Kwong, Manulife on the topic **What are the skillsets required of a quant?**

Moderated by Matthew Rooney, Selby Jennings

Participants

Jeanine Kwong - Global Head of Investment Risk Oversight, Manulife

Matthew Rooney - Head of Quant Analytics, Selby Jennings

Exploring neural networks for pricing and calibration of stochastic volatility and term structure models

16:30 - 17:00
A: FX, Commodities & Trading Innovations

Participants

Jörg Kienitz - Lecturer, Faculty of Mathematics, Bergische Universität Wuppertal and University of Cape Town

An Arbitrage Free Surface in the Model Free Space

16:30 - 17:00
B: Risk Management & Liquidity

Participants

Alexander Skabelin - Quantitative finance manager, Bank of America

How AI discovered Large-Scale Pair-Trading on S&P500?

16:30 - 17:00
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

In this talk, I will first show the fascinating ability of Deep Reinforcement Learning to develop market-neutral, risk-sensitive, commission-avoidant and market-agnostic Financial Portfolio Management strategies, which avoid transaction costs and generalize out-of-sample periods on both FX and US-stock markets, by acting similar to industry-standard pair-trading that it can perform efficiently on a very large-scale by learning and exploiting correlations among complex hierarchical clusters of financial assets. Then, I will also explain how this portfolio management research led me to propose the "Population-based Constant Rebalanced Portfolio Selection", a novel method that tackles validation-set overfitting due to random initialization or selection biases.

Participants

Kamer Ali Yuksel - Chief Data Scientist, hawk:AI

Short break

17:00 - 17:15
A: FX, Commodities & Trading Innovations

Short break

17:00 - 17:15
B: Risk Management & Liquidity

Chair's closing remarks

17:00 - 17:05
C: QuantMinds Alpha - Algo Trading, E-trading & Machine Learning

Is volatility hyper-rough?

17:15 - 17:45
A: FX, Commodities & Trading Innovations

Participants

Nic Hutchings - Executive Director, Morgan Stanley

Yaroslav Melnyk - Quantitative Analyst, FX derivatives modelling team, Morgan Stanley

Do we need to update our models after the crisis?

17:15 - 17:45
B: Risk Management & Liquidity

Participants

Robert Carver - Visiting Lecturer, Queen Mary, University of London

Chair's closing remarks

17:45 - 17:50
A: FX, Commodities & Trading Innovations

Chair's closing remarks

17:45 - 17:50
B: Risk Management & Liquidity

FX & Commodities Hangout

17:50 - 19:00
FX & Commodities Hangout

Network 1-2-1 with old friends and new or join our small group, content themed hang out to discuss topics that matter to you with likeminded quants

Risk Management Hangout

17:50 - 19:00
Risk Management Hangout

Network 1-2-1 with old friends and new or join our small group, content themed hang out to discuss topics that matter to you with likeminded quants

ML Hangout

17:50 - 19:00
ML Hangout

Network 1-2-1 with old friends and new or join our small group, content themed hang out to discuss topics that matter to you with likeminded quants

SCHEDULE
MAIN CONFERENCE DAY 3 - 05/11/2020

TIME	A: FX, COMMODITIES & TRADING INNOVATIONS	B: RISK MANAGEMENT & LIQUIDITY	C: QUANTMINDS ALPHA - ALGO TRADING, E-TRADING & MACHINE LEARNING	FX & COMMODITIES HANGOUT	ML HANGOUT	PLENARY	RISK MANAGEMENT HANGOUT
08:00	**08:30** - Registration & welcome coffee	**08:30** - Registration & welcome coffee	**08:30** - Registration & welcome coffee	**08:30** - Registration & welcome coffee	**08:30** - Registration & welcome coffee	**08:30** - Registration & welcome coffee	**08:30** - Registration & welcome coffee
09:00						**09:00** - Chair's opening remarks **09:05** - Machine learning: Separating fact from fiction **09:45** - Short break	
10:00						**10:00** - Lessons on Decision Making from a Poker Champion **10:30** - Short break **10:45** - How can Formula 1 help?	
11:00	**11:15** - Morning networking break **11:45** - Chairs opening remarks **11:50** - One Step Forwards, One Step Back: Exact PDE Solvers and Stable Trees	**11:15** - Morning networking break **11:45** - Chair's opening remarks **11:50** - Excursion risk: a new approach to risk analysis of dynamic trading strategies	**11:15** - Morning networking break **11:45** - Chair's opening remarks **11:50** - Applications of machine learning to portfolio allocation	**11:15** - Morning networking break	**11:15** - Morning networking break	**11:15** - Morning networking break	**11:15** - Morning networking break

SCHEDULE
MAIN CONFERENCE DAY 3 - 05/11/2020

TIME	A: FX, COMMODITIES & TRADING INNOVATIONS	B: RISK MANAGEMENT & LIQUIDITY	C: QUANTMINDS ALPHA - ALGO TRADING, E-TRADING & MACHINE LEARNING	FX & COMMODITIES HANGOUT	ML HANGOUT	PLENARY	RISK MANAGEMENT HANGOUT
12:00	**12:20** - Short break **12:35** - Fourier-based methods for the management of complex insurance products	**12:20** - Short break **12:35** - Pricing & hedging under uncertainty	**12:20** - Short break **12:35** - Quantitative Investment Strategies – Where to look next?				
13:00	**13:05** - Lunch	**13:05** - Lunch	**13:05** - Lunch				
14:00	**14:00** - Opportunities in FI/FX hedging with the cross currency basis **14:30** - Short break **14:45** - A Lognormal Type Stochastic Volatility Model With Quadratic Drift	**14:00** - Risk Parity in a Regime Switching Context **14:30** - Short break **14:45** - IM forecast quality: certain uncertainties and uncertain certainties	**14:00** - Bond curve modelling **14:30** - Short break **14:45** - Yield Curve Forecasting: Aspects of Mathematical Finance and Computational Statistics				
15:00	**15:15** - Short break **15:30** - Modeling Energy Forward Curves in the Framework of the Reproducing Kernel Hilbert Spaces	**15:15** - Short break **15:30** - Full Probabilistic Control for Direct, Robust, Systematic and Targeted Stressing of the Correlation Matrix	**15:15** - Short break **15:30** - Interpretable ML for fundamental analysis during extreme event				

SCHEDULE
MAIN CONFERENCE DAY 3 - 05/11/2020

TIME	A: FX, COMMODITIES & TRADING INNOVATIONS	B: RISK MANAGEMENT & LIQUIDITY	C: QUANTMINDS ALPHA - ALGO TRADING, E-TRADING & MACHINE LEARNING	FX & COMMODITIES HANGOUT	ML HANGOUT	PLENARY	RISK MANAGEMENT HANGOUT
16:00	**16:00** - Afternoon networking break & Boardroom Discussion **16:30** - Exploring neural networks for pricing and calibration of stochastic volatility and term structure models	**16:00** - Afternoon networking break & Boardroom Discussion **16:30** - An Arbitrage Free Surface in the Model Free Space	**16:00** - Afternoon networking break & Boardroom Discussion **16:30** - How AI discovered Large-Scale Pair-Trading on S&P500?	**16:00** - Afternoon networking break & Boardroom Discussion	**16:00** - Afternoon networking break & Boardroom Discussion	**16:00** - Afternoon networking break & Boardroom Discussion	**16:00** - Afternoon networking break & Boardroom Discussion
17:00	**17:00** - Short break **17:15** - Is volatility hyper-rough? **17:45** - Chair's closing remarks	**17:00** - Short break **17:15** - Do we need to update our models after the crisis? **17:45** - Chair's closing remarks	**17:00** - Chair's closing remarks	**17:50** - FX & Commodities Hangout	**17:50** - ML Hangout		**17:50** - Risk Management Hangout

SESSIONS
MAIN CONFERENCE DAY 4 - 06/11/2020

QuantMinds International

2 - 6 November 2020
Online virtual conference
UTC/GMT+1 Time Zone

Networking and discussion groups

10:05 - 10:25

Chair's opening remarks

10:25 - 10:30
A: Option pricing & volatility

Chair's opening remarks

10:25 - 10:30
B: Quant 2.0 Being a Quant in the new era &
QuantMinds Alpha

Chair's opening remarks

10:25 - 10:30
C: XVA & Model Risk

A kernel-free particle method: smile problem resolved

10:30 - 11:00
A: Option pricing & volatility

Participants

Aitor Muguruza Gonzalez - Head of Quantitative
Modelling and Data Analytics, Kaiju Capital
Management

How quant can integrate ESG with limited data

10:30 - 11:00
B: Quant 2.0 Being a Quant in the new era &
QuantMinds Alpha

Working Groups

30 minute working group discussion

Participants

Antonia Lim - Head of Quantamental Investments,
Schroders

Jan De Spiegeleer - Visiting Professor, KU Leuven

Overnight risk-free rates are risky

10:30 - 11:00
C: XVA & Model Risk

Overnight risk-free rates, e.g. SONIA and SOFR, have
been popularised as risk-free interest rate benchmarks
to succeed LIBOR. The discussion on the transition
from term-linked to overnight reference interest rates
has overlooked an important item: roll-over risk. Even
though overnight benchmarks may be viewed as (or
near-) credit-risk-free, the liquidity component of roll-
over risk persists, thus suggesting that overnight RFR
benchmarks are no like-for-like replacements for tenor-
based rates. This source of term risk may have
implications for refinancing strategies and market
participants whose investments are based on
overnight interest rate benchmarks. In this
presentation, we shall focus on understanding how
roll-over risk emerges and why refinancing at a so-
called risk-free rate may be the costliest strategy.

Participants

Andrea Macrina - Reader in Mathematics, University
College London

Short break

11:00 - 11:15
A: Option pricing & volatility

Short break

11:00 - 11:15
B: Quant 2.0 Being a Quant in the new era &
QuantMinds Alpha

Short break

11:00 - 11:15
C: XVA & Model Risk

Reconciling rough volatility with jumps

11:15 - 11:45
A: Option pricing & volatility

Participants

Eduardo Abi Jaber - Assistant Professor, Paris 1
Panthéon-Sorbonne University

Portfolio Optimization

11:15 - 11:45
B: Quant 2.0 Being a Quant in the new era &
QuantMinds Alpha

Working Groups

30 minute working group discussion

Participants

Thomas Schmelzer - Head of Quantitative Research,
Lobnek Wealth Management

Raphael Hauser - Associate Professor in Numerical
Mathematics, Oxford Mathematical Institute

Funding value adjustment: accounting versus economic management perspectives

11:15 - 11:45
C: XVA & Model Risk

Participants

Alberto Elices - Head of XVA Model Validation, Banco
Santander

Short break

11:45 - 12:00
A: Option pricing & volatility

Short break

11:45 - 12:00
B: Quant 2.0 Being a Quant in the new era &
QuantMinds Alpha

Short break

11:45 - 12:00
C: XVA & Model Risk

Smiling Triangles and Decoupling Joint Density

12:00 - 12:30
A: Option pricing & volatility

Participants

George Hong - Head of APAC Quantitative & Risk
Strategies, Credit Suisse

SESSIONS
MAIN CONFERENCE DAY 4 - 06/11/2020

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Panel: Passive vs active asset management

12:00 - 12:30
B: Quant 2.0 Being a Quant in the new era & QuantMinds Alpha

Participants

Erik Vynckier - Interim Chief Executive, Foresters Friendly Society

Aymeric Kalife - CEO at iDigital Partners & Associate Professor, Paris Dauphine University

Arta Babaee - Formerly Academic Visitor, Imperial College London

Chris Kelliher - Quantitative Analyst, Global Asset Allocation team, Fidelity Investments

Client engineering of XVA in crisis and normality: Restructuring, Mandatory Breaks and Resets

12:00 - 12:30
C: XVA & Model Risk

Participants

Chris Kenyon - Head of XVA Quant Modelling, MUFG Securities EMEA

Lunch & Presentation

12:30 - 13:30

Presentation by Stéphane Crépey and Bouazza Saadeddine on the topic **Deep XVA Analysis: The Secret Sauce**

Participants

Stéphane Crépey - Professor of Mathematics , Université de Paris, Laboratoire de Probabilités, Statistique et Modélisation (LPSM)

Intraday market microstructure and the use of exogenous information in quantitative execution

13:30 - 14:00
B: Quant 2.0 Being a Quant in the new era & QuantMinds Alpha

Participants

Michael Steliaros - Global Head of Quantitative Execution Services, Goldman Sachs

Kernels for XVA/PFE in the context of Exotics Pricing and Risk Management

13:30 - 14:00
C: XVA & Model Risk

Participants

Christian Raynal - Associate Director, Senior Risk Officer, European Bank for Reconstruction and Development

Short break

14:00 - 14:15
B: Quant 2.0 Being a Quant in the new era & QuantMinds Alpha

Short break

14:00 - 14:15
C: XVA & Model Risk

Challenges of Indexation in S&P 500 Index Volatility Investment Strategies

14:15 - 14:45
A: Option pricing & volatility

Why is volatility not yet an asset class?

S&P 500 Index option-based volatility indexes have untenable risk-return profiles. These volatility indexes are not designed with consideration of important real-world risk characteristics of options and fail to represent volatility as a differentiated asset-class with relevance to the long-term utility of investors. Implications of the S&P 500 Index return distribution on the profit and loss (P&L) distribution of a directionally hedged option position are presented. The ensuing five cardinal characteristics of options on S&P 500 Index, central to designing viable volatility investment strategies, are enumerated.

Participants

Margaret Sundberg - Quantitative Trader Portfolio Manager, Volaris Capital Management

Learning the Optimal Portfolio

14:15 - 14:45
B: Quant 2.0 Being a Quant in the new era & QuantMinds Alpha

Portfolio Optimization for traders and risk managers

- Portfolio optimization from a risk management point of view
- Eligible risk optimization strategies
- Optimization metaheuristics and evolutionary algorithms
- Application to both simple and real test cases

Participants

Marco Scaringi - Quantitative Analyst Fair Value Policy, Intesa Sanpaolo

Marco Bianchetti - Head of Fair Value Policy, Financial and Market Risk Management, Intesa Sanpaolo

The Two KVAs

14:15 - 14:45
C: XVA & Model Risk

Participants

Matthias Arnsdorf - Managing Director & Head Of Counterparty Credit Risk Modeling Group, JPMorgan Chase

Short break

14:45 - 15:00
A: Option pricing & volatility

Short break

14:45 - 15:00
B: Quant 2.0 Being a Quant in the new era & QuantMinds Alpha

Short break

14:45 - 15:00
C: XVA & Model Risk

Deep Hedging

15:00 - 15:30
A: Option pricing & volatility

Participants

Mark Higgins - COO, Beacon Platform Inc.

Microstructure & information flows between crypto asset spot and derivative markets

15:00 - 15:30
B: Quant 2.0 Being a Quant in the new era & QuantMinds Alpha

- Which crypto instrument on which exchange is the first to incorporate new information?
- Where are the most informed traders located?
- How long do traders on other platforms have to profit from the leaders reaction to news?
- Who is already trading variance swaps on bitcoin and how are they priced?
- How are CME options faring compared with volume on the unregulated crypto exchanges?

A teaser to her presentation can be found here

Participants

Carol Alexander - Visiting Professor at Peking University HSBC Business School at Oxford & Professor of Finance, University of Sussex

SESSIONS
MAIN CONFERENCE DAY 4 - 06/11/2020

QuantMinds International

2 - 6 November 2020
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HJM model calibration, applications and first correction

15:00 - 15:30
C: XVA & Model Risk

Participants

Viatcheslav Belyaev - Senior Quantitative Analyst, U.S. Bank

Chair's closing remarks

15:30 - 15:35
C: XVA & Model Risk

Afternoon networking break

15:35 - 16:05

Local Gaussian approximation for modeling collateralized exposure

16:05 - 16:35
A: Option pricing & volatility

Participants

Michael Pykhtin - Manager, Quantitative Risk, U.S. Federal Reserve Board

Will groups of 3 ruin the World Cup?

16:05 - 16:35
B: Quant 2.0 Being a Quant in the new era & QuantMinds Alpha

Participants

Julien Guyon - Senior Quant, Bloomberg L.P.

End of conference

16:35 - 17:35

SCHEDULE
MAIN CONFERENCE DAY 4 - 06/11/2020

TIME	A: OPTION PRICING & VOLATILITY	B: QUANT 2.0 BEING A QUANT IN THE NEW ERA & QUANTMINDS ALPHA	C: XVA & MODEL RISK
10:00	**10:05** - Networking and discussion groups **10:25** - Chair's opening remarks **10:30** - A kernel-free particle method: smile problem resolved	**10:05** - Networking and discussion groups **10:25** - Chair's opening remarks **10:30** - How quant can integrate ESG with limited data	**10:05** - Networking and discussion groups **10:25** - Chair's opening remarks **10:30** - Overnight risk-free rates are risky
11:00	**11:00** - Short break **11:15** - Reconciling rough volatility with jumps **11:45** - Short break	**11:00** - Short break **11:15** - Portfolio Optimization **11:45** - Short break	**11:00** - Short break **11:15** - Funding value adjustment: accounting versus economic management perspectives **11:45** - Short break
12:00	**12:00** - Smiling Triangles and Decoupling Joint Density **12:30** - Lunch & Presentation	**12:00** - Panel: Passive vs active asset management **12:30** - Lunch & Presentation	**12:00** - Client engineering of XVA in crisis and normality: Restructuring, Mandatory Breaks and Resets **12:30** - Lunch & Presentation
13:00		**13:30** - Intraday market microstructure and the use of exogenous information in quantitative execution	**13:30** - Kernels for XVA/PFE in the context of Exotics Pricing and Risk Management
14:00	**14:15** - Challenges of Indexation in S&P 500 Index Volatility Investment Strategies **14:45** - Short break	**14:00** - Short break **14:15** - Learning the Optimal Portfolio **14:45** - Short break	**14:00** - Short break **14:15** - The Two KVAs **14:45** - Short break
15:00	**15:00** - Deep Hedging **15:35** - Afternoon networking break	**15:00** - Microstructure & information flows between crypto asset spot and derivative markets **15:35** - Afternoon networking break	**15:00** - HJM model calibration, applications and first correction **15:30** - Chair's closing remarks **15:35** - Afternoon networking break
16:00	**16:05** - Local Gaussian approximation for modeling collateralized exposure **16:35** - End of conference	**16:05** - Will groups of 3 ruin the World Cup? **16:35** - End of conference	**16:35** - End of conference