Tech-Driven Finance Forum

23 June 2023

National University of Singapore, Singapore

Join us for the Tech-Driven Finance Forum, an exciting event that showcases the latest developments in the intersection of finance and technology. In honor of the retirement of Prof. Jin-Chuan Duan, Jardine Cycle & Carriage Professor of Finance and the Executive Director of the Asian Institute of Digital Finance (AIDF), this forum brings together leading experts to discuss cutting-edge topics that are shaping the future of finance.

Explore the latest insights on stock-based loans, tokenization, cross-border payments, and recovery modeling via best subset selection and sequential Monte Carlo. Our esteemed speakers include Peter Ritchken, Mario Gabelli Distinguished Professor in Finance at Case Western Reserve University, Muh Hwa LEE, Managing Director and Head of Technology at Coin Systems Onyx by JP Morgan, Andras Fulop, Professor of Finance at ESSEC Business School, Patrick Tang, PhD student at ESSEC Business School, and Johan Sulaeman, Professor of Finance at NUS Business School.

Don't miss out on the opportunity to engage with these experts and expand your knowledge on the latest developments in tech-driven finance. Register now for the Tech-Driven Finance Forum and join us on this exciting journey towards a more innovative future on 23 June.

Organized by: Asian Institute of Digital Finance

Program Schedule

Date: 23 June 2023, Friday

Venue: Room I4-01-03 (Seminar Room), Innovation 4.0 (I4) Building, 3 Research Link, 117602

Time	Details
9:00am	Registration
9:30am	Opening by MC
9:35am	Address by Dr Rajesh Krishnamachari, MD, GIC
9.40am	Address by Prof Duan Jin-Chuan, ED, AIDF
9.45am	Address by Prof Chen Ying, Director, PhD programme, AIDF
9:50am	Signing Ceremony & Photo Taking Signing Parties: Dr Rajesh Krishnamachari, Managing Director, Director of Investment Insights Group, GIC Prof Duan Jin-Chuan, Executive Director, AIDF Witness: Damien Pang, Deputy Chief FinTech Officer, MAS
10:00am	Break
10:30am	Commencement of Tech-Driven Finance Forum
10:30am - 11:10am	On Stock Based Loans, Peter Ritchken (Mario Gabelli Distinguished Professor in Finance, Case Western Reserve University) via Zoom
11:10a - 11:50am	Tokenization and the Future of Cross Border Payment, Muh Hwa Lee (Managing Director and Head of Technology, Coin Systems Onyx by JP Morgan)
11:50am - 12:20pm	Musical Interlude
12:20pm - 2:00pm	Lunch & Networking
2:00pm - 2:40pm	Recovery Modelling via best subset selection and Sequential Monte Carlo, Andras Fulop (Professor of Finance at ESSEC Business School) & Patrick Tang (PhD student at ESSEC Business School)
2:40pm - 3:20pm	Inclusivity in Sustainable Economy: The Role of Technology in Financing Small Enterprises and the Agricultural Sector, Johan Sulaeman (Professor of Finance at NUS Business School)
3:20pm	Closing remarks

Title of presentation: On Stock Based Loans

Abstract: We investigate the equilibrium interest rate charges on non-recourse and recourse loans secured by stock. In such loans, the client retains the option to prepay and recover the collateral stock. We adopt a structural model of the firm where debt levels, with endogenous bankruptcy, affect equity dynamics. Complicating matters, the link between total equity and the price of a share of stock that forms the collateral depends on the extent of dilutions and buybacks that occur. For levered firms, in bad states of nature, due to dilution, stock prices typically fall faster than equity values; and in good states of nature, for firms that engage in buybacks, stock prices will rise faster than equity values. Banks that ignore these features underestimate the equilibrium interest rate charge on stock-based loans. We provide an analysis of individual stock-based loans and their portfolio characteristics, the latter of which can be used by banks to ascertain capital requirements.

Speaker: Peter Ritchken

Short Bio: Peter Ritchken is the Mario J. Gabelli Distinguished Professor of Finance at the Weatherhead School of Management at Case Western Reserve University in Cleveland. He has written several textbooks on derivatives, is on the editorial board of a few journals and has published extensively in the derivatives area. He consults with large investment banks and brokerage firms, and has conducted executive education programs in the US, Europe, Asia, Australia and South Africa. His research is at the interface between finance and operations and includes real options and capital structure modeling. He specializes in pricing interest rate and credit derivatives and banking regulation issues.

Title of presentation: Tokenization and the Future of Cross Border Payment

Abstract: SWIFT correspondent banking for decades has been the primary wholesale settlement mechanism for cross border payments for decades, but friction points resulting in high end-to-end operational costs remain until today. The approach of using a messaging platform to orchestrate fragmented Bank ledgers inherently requires reconcilation in every step of the payment flow, thus increasing complexity and turnaround time. This is especially so when Bank systems operate in different timezones with limited common availability window. We explore the use of blockchain technology where banks can operate their ledger under a shared platform executed by smart contracts. By adopting a uniform token standard it paves the way for interoperability and reduces settlement risk. This presentation covers some of the work done by Onyx as a peek into how the future of cross-border payments may look like.

Speaker: Muh Hwa Lee (JP Morgan)

Short Bio: Muh Hwa leads the technology team for Onyx Coin Systems in J.P. Morgan covering next generation wholesale payment solutions using blockchain technology. He is the architect of JP Morgan Coin,

a blockchain-based deposit account platform for wholesale clients supporting 24x7 US dollar transfers globally within the Bank. He has also been involved in industry projects, more recently the creation of Partior, a fintech company cofounded by DBS Bank, Temasek and J.P. Morgan. For the past 11 years he has held different roles within Payments Technology from program manager, architecture to product development of payment initiatives globally.

Prior to J.P. Morgan, Muh Hwa has worked for other financial institutions in payments and cash management technology covering client channels, receivables, liquidity management and FX payments. He has managed delivery teams across multiple geographies and transformed software development processes using Agile methodology.

Muh Hwa holds a Bachelor's degree in Mechanical Engineering and Master of Technology in Software Engineering, both from National University of Singapore.

Title of presentation: Recovery Modelling via best subset selection and Sequential Monte Carlo

Abstract: Most existing studies on recovery modelling, preselect a small and manageable set of variables driving recovery rates across firms, guided by economic intuition. In this paper, instead we allow a large set of candidate variables to enter the set of potential predictors. To deal with overfitting, we resort to using the zero-norm penalty, which means that one chooses an optimal subset of k predictors among all potential variables and use Sequential Monte Carlo techniques to solve the resulting NP hard computational problem. We apply our methodology to recovery data on US corporate bonds and investigate both linear models and specifications that allow for interactions among predictor variables.

Speaker: Andras Fulop

Short Bio: Andras Fulop is a Professor of Finance at ESSEC Business School, Paris. He joined ESSEC in 2006 after receiving a Ph.D. in finance from the Rotman School of Management, University of Toronto. He teaches Fixed Income and Financial Markets at the Master in Finance and in the Master in Management and Econometrics for the Ph.D. His current research focuses on (1) Bayesian Econometrics and Sequential Monte Carlo Techniques with applications in asset pricing (2) empirical examination of liquidity in credit derivative markets (3) Machine Learning in Finance. He has published in academic journals such as the Review of Financial Studies, Journal of Business and Economic Statistics or the Journal of Econometrics. He is an associate editor at the Journal of Financial Econometrics and a subject editor at the Journal of Multinational Financial Management.

Speaker: Patrick Tang

Short Bio: Patrick Tang is a PhD student in Data Analytics at ESSEC Business School, where he has been pursuing his degree since 2019. He obtained his Bachelor's degree in Applied Mathematics from the University of Edinburgh and a Master's degree in Business Analytics from Warwick Business School.

Patrick's research focuses on econometrics and Monte Carlo methods. He is passionate about developing innovative techniques for sequential Monte Carlo and applying them to real-world challenges in economics, finance, and public policy.

Title of presentation: Inclusivity in Sustainable Economy: The Role of Technology in Financing Small Enterprises and the Agricultural Sector

Abstract: Technology can play an important role in improving the economic condition for the weakest part of the society. In particular, it can facilitate access to financing for small enterprises and the agricultural sector. Despite technology's potential benefits in increasing total productivity, it can also lead to negative outcomes, particularly wasteful usage of scarce natural resources and inequitable allocation of technological benefits. How can technology ensure that the growing economy evolves to be more sustainable yet inclusive?

Speaker: Johan Sulaeman

Short Bio: Johan Sulaeman is the Director of the Sustainable and Green Finance Institute (SGFIN) at NUS. He is also a Dean's Chair and an Associate Professor in the Department of Finance at the NUS Business School. He also serves as one of the Scientists at AIDF (Asian Institute of Digital Finance). He teaches in various educational programmes and courses, and has been involved in designing and delivering executive education programmes for large companies and financial institutions in the region, primarily on topics related to sustainability. His current research focuses on the measurement and monetization of corporate environmental and social activities, as well as the effects of geographic factors on various economic outcomes, including corporate social and environmental performance. His research has been published in top economics and business journals, and covered in various international publications, including The Wall Street Journal and The New York Times.