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Computing Machinery

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NEWS RELEASE

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ACM ANNOUNCES NEW INTERNATIONAL CONFERENCE ON AI IN FINANCE

Inaugural Conference to Be Held October 14-16

New York, NY, October 6, 2020 – ACM, the Association for Computing Machinery, will hold the inaugural [ACM International Conference on AI in Finance \(ICAIF\)](#), virtually from October 14-16. Advances in artificial intelligence are having significant impacts on finance, including financial markets, financial services, and the global financial system more broadly. ICAIF is a new scholarly conference to bring together researchers from a variety of disciplines to share technical advances and insights on the effects of AI on the finance world. The ICAIF conference includes participation from academia, government, regulatory agencies, financial institutions, NGOs and other stakeholders in the AI and finance communities.

“AI is transforming the finance industry at every level, from the consumer, who might be interacting with an intelligent chatbot during an online banking session, to a bank CEO, who may be investing in new AI technologies to better predict trends, increase revenues, and find more efficient ways to keep financial systems secure,” explained ICAIF Program Chair Tucker Balch, J.P. Morgan AI Research. “We’ve put together a dynamic program of work from top researchers and we invite everyone who has a stake in how AI is shaping finance to join us by registering for the conference.”

Visit [here](#) to view the entire program.

2020 ACM ICAIF HIGHLIGHTS

ICAIF features a distinguished slate of keynote speakers:

Marcos López de Prado, *Founder and CIO of True Positive Technologies; Author, “Advances in Financial Machine Learning”*

Charles Elkan, *Managing Director, Goldman Sachs*

***Yolanda Gil**, Research Professor of Computer Science and Spatial Sciences and Principal Scientist at USC Information Sciences Institute*

***Michael Kearns**, Professor and National Center Chair, Computer and Information Science at the University of Pennsylvania*

***Susan Tibbs**, Vice President, Market Regulation, FINRA*

***Jeannette Wing**, Professor and Director, Data Science Institute, Columbia University*

Research Highlights (Select Papers) From ICAIF

Below are highlighted papers. For the full list of papers, visit [here](#).

“Machine learning methods to detect money laundering in the Bitcoin blockchain in the presence of label scarcity”

Joana Lorenz, NOVA-IMS, Feedzai; Maria Inês Silva, David Aparício, João Tiago Ascensão, Pedro Bizarro, Feedzai

Every year, criminals launder billions of dollars acquired from serious felonies (e.g., terrorism, drug smuggling, or human trafficking) harming countless people and economies. Cryptocurrencies, in particular, have developed as a haven for money laundering activity. Machine Learning can be used to detect these illicit patterns. However, labels are so scarce that traditional supervised algorithms are inapplicable. In this paper, the authors propose an active learning solution to detect money laundering with minimal access to labels.

“Algorithms in Future Capital Markets: A Survey on AI, ML and Associated Algorithms in Capital Markets”

Adriano S. Koshiyama, Nick Firoozye, Philip Treleaven, University College London

This paper reviews Artificial Intelligence (AI), Machine Learning (ML), and associated algorithms in future Capital Markets. New AI algorithms are constantly emerging, with each ‘strain’ mimicking a new form of human learning, reasoning, knowledge, and decision-making. The current main disrupting forms of learning include Deep Learning, Adversarial Learning, Transfer, and Meta Learning. Albeit these modes of learning have been in the AI/ML field for more than a decade, they now are more applicable due to the availability of data, computing power, and infrastructure. The developments have led to a scramble for talent across the Investment Banking world, with Data Scientists poached from Tech and retail companies; and AI Labs are being set up inside banks. The authors envisage not an incremental upgrade, but a Cambrian explosion of new use-cases that will reshape current Capital Markets.

"Choosing News Topics to Explain Stock Market Returns"

Paul Glasserman, Kriste Krstovski, Paul Laliberte, Harry Mamaysky, Columbia University

This paper presents a method to explain daily changes in stock prices through news articles about companies on the same day. The authors link stock returns to news through an algorithm that discovers important topics in the news articles. The algorithm is fully automated and does not rely on subjective

assessments. Some of the topics it discovers are associated with company earnings or credit ratings; others are associated with geographic regions or specific industries. The algorithm can find up to 500 topics. The authors have tested the method using over 90,000 articles about S&P 500 companies and find that it provides an appreciable increase in the ability to explain market moves through news.

“SecretMatch: Inventory Matching from Fully Homomorphic Encryption”

Ben Diamond, Antigoni Polychroniadou, Tucker Balch, J.P. Morgan

As it is currently conducted, inventory matching requires that clients share their intentions to buy or sell certain securities, along with the sizes of their positions, with a transacting bank. Clients worry that if this information were to “leak” in some way, other market participants could become aware of their intentions, and cause the price to move adversely against them before they trade. The authors present a cryptographic approach to multi-client inventory matching, which preserves the privacy of clients. The central tool is threshold fully homomorphic encryption implemented with a new, efficient, fully-homomorphic integer library which combines GPU-level parallelism with insights from digital circuit design. The solution is also post-quantum secure. The authors report on an implementation of their protocol, and describe its performance.

Workshops

The conference will host two workshops on Wednesday, October 14:

“AI in Africa for Sustainable Economic Development”

This workshop aims to bring together researchers and industry practitioners to discuss the opportunities and challenges of applying AI to address sustainable financial and economic development in Africa.

“Women in AI and Finance”

The goal of the workshop is to bring together women at the intersection of AI and finance and create a forum where they can share their experience, ideas and vision.

Panel

“AI in Financial Regulation and Compliance”

This panel will include representatives from the US Federal Reserve, US Department of the Treasury, the Financial Industry Regulatory Authority (FINRA) and the investment banking industry.

About ACM

[ACM, the Association for Computing Machinery](#), is the world’s largest educational and scientific computing society, uniting computing educators, researchers and professionals to inspire dialogue, share resources and address the field’s challenges. ACM strengthens the computing profession’s collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking.

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