

ICAIF'24

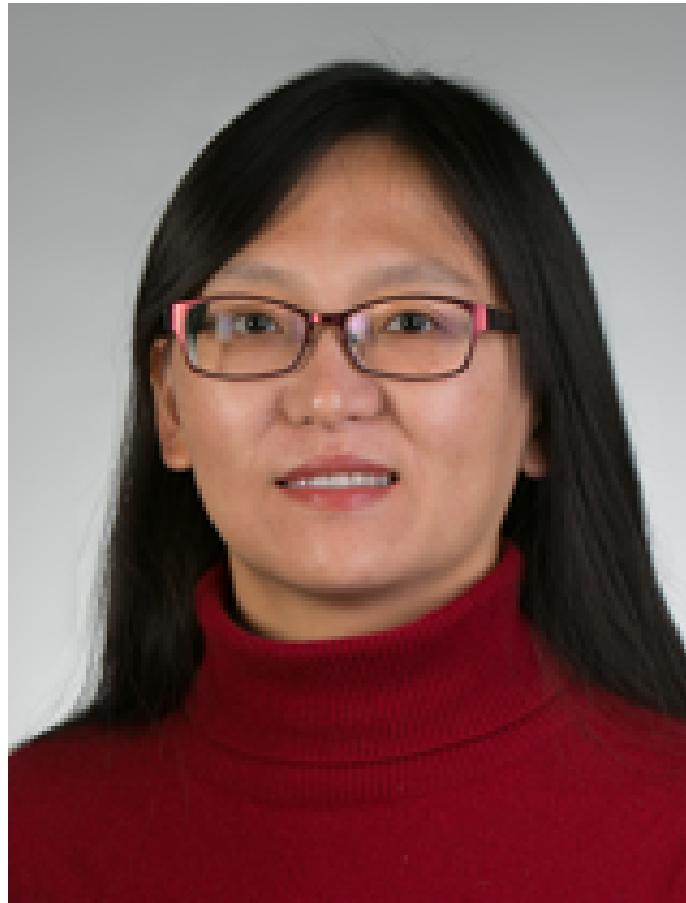
5th ACM International Conference on AI in Finance

ICAIF'22 Keynote Speakers

(additional speakers to be confirmed)

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Main Conference



**Xin
Guo,
UC
Berkeley**

Generative Adversarial Networks: An analytical perspective and applications in finance

Generative Adversarial Networks (GANs) have attracted intense interest in computer vision and image generation, and have gained popularity for simulating financial time series data. In this talk, I will first provide a gentle review of the mathematical framework behind GANs and the recent advancement of GANs in quantitative finance. I will then proceed to discuss a few challenges in GANs training from an analytical perspective. I will finally report some recent progress for GANs training in terms of its stability and convergence analysis.

Bio: Xin Guo is the Coleman Fung Chair professor at the college of engineering, UC Berkeley. Prior to that, she was an associate professor at the School of ORIE, Cornell University, and a research staff member at the Mathematics Department of IBM T.J. Watson Research Center. Her research interests are in stochastic processes, stochastic controls and games, and mathematics of machine learning, with

applications to financial engineering and medical data analysis. She is the co-editor-in-chief for *Frontier of Mathematical Finance*, and on the editorial board of several leading journals of controls, mathematical finance, and operation research.



**Sebastian
Jaimungal,
University
of Toronto**

Time-Consistency in Risk-aware Reinforcement Learning

Reinforcement learning (RL) traditionally aims to maximize/minimize objective functionals that are expectations of total (discounted) running rewards/costs and tacitly ignores measures of risk. While in the extant literature there are various approaches for incorporating risk, e.g., changing the objective functional to expected shortfall, these approaches typically lead to what is known as time-inconsistent solutions. Here, I will present the issue of time inconsistency, introduce new methods to pose and solve time-consistent risk-aware RL problems. Additionally, I will show how to extend this approach to solve for time-consistent risk budgeting allocations. The tools are based on a type of non-linear dynamic programming principle, elicitable maps, and actor-critic methods, coupled with deep learning. I will provide several illustrative examples to gain some intuitive insights.

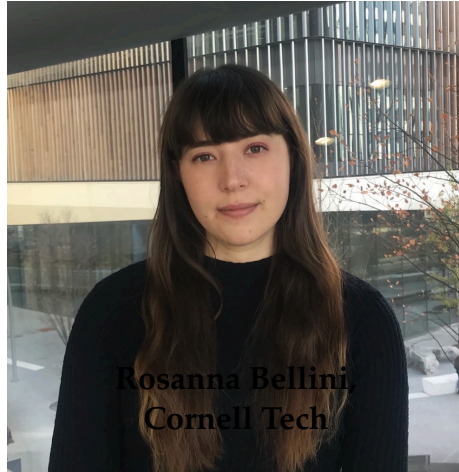
This is based on joint works with Anthony Coache, Silvana Pesenti, Yuri Saporito, Rodrigo Targino, and Hariom Tatsat.

Bio: Dr. Sebastian Jaimungal is a full Professor of Mathematical Finance at the University of Toronto. He is the former Chair of SIAM's activity group in Financial Mathematics and Engineering, a managing editor of *Quantitative Finance*, and an associate editor for the *SIAM Journal on Financial Mathematics*, *Frontiers of Mathematical Finance*, and the *Journal of Dynamics and Games*, among others. Dr. Jaimungal is a Fellow of the Fields Institute for Mathematical Sciences and a member of the Oxford-Man Institute and his research interests include reinforcement learning, stochastic control and games, and algorithmic trading.

Workshops



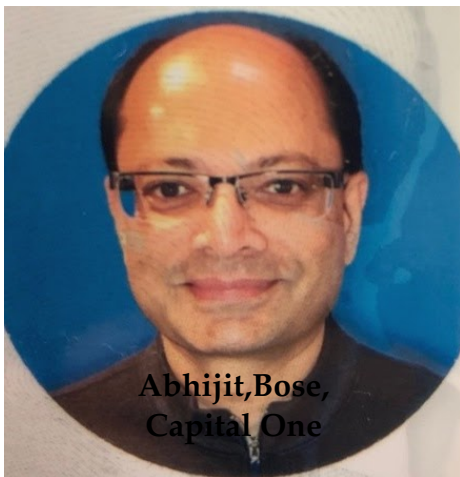
**Peter Balch,
JPMorgan Chase**



**Rosanna Bellini,
Cornell Tech**



**Marius Bogoevici,
Red Hat**



**Abhijit Bose,
Capital One**



**Swami Chandrasekaran,
KPMG**



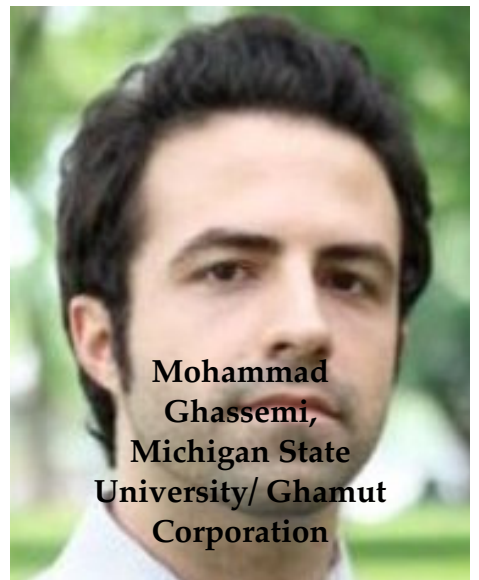
**Fabiana Clemente,
YData**



**Anastassia Fedyk,
UC Berkeley**

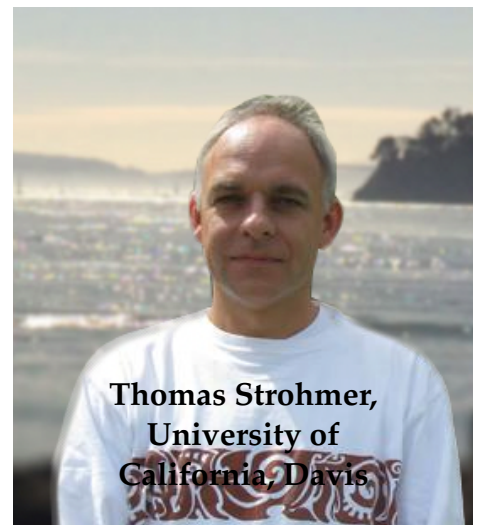


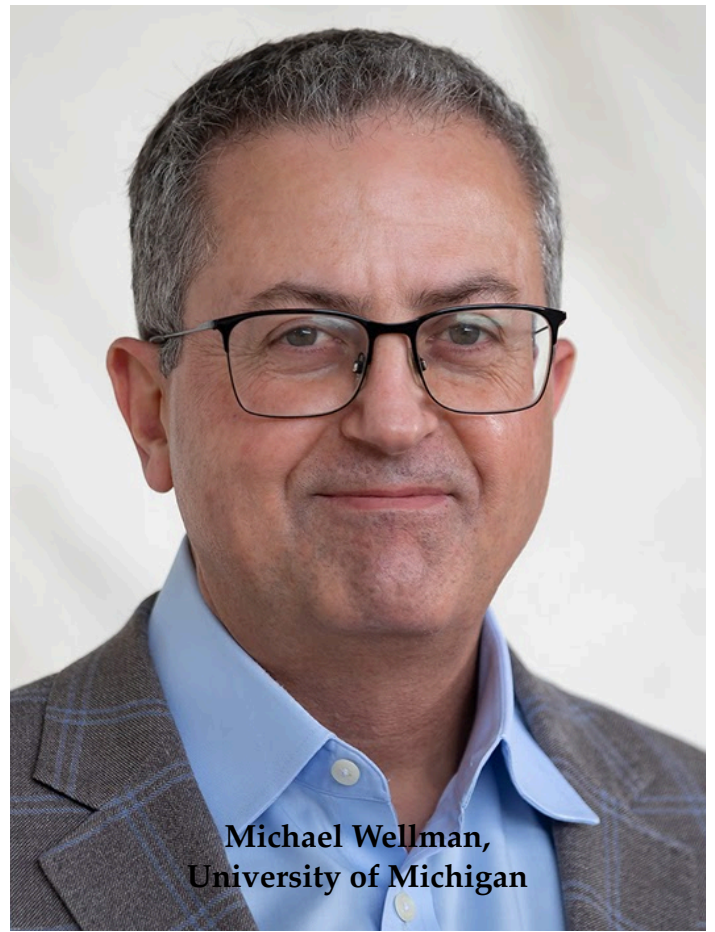
**Jakob Foerster,
University of Oxford**



**Mohammad
Ghassemi,
Michigan State
University/ Ghamut
Corporation**







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