Research Highlight: A Mathematical Theory of Fintech

Work of Professor Steven KOU

Recently, Prof Steven KOU and his co-authors studied the following two topics related to the mathematical theory of Fintech.

(1*) P2P equity financing:* In a newly emerging P2P equity finance, called first loss scheme, the fund managers can set up a deposit, e.g. 10%, by using the manager's own money, and if there is a loss, the deposit money will be used first to offset the losses; in return the fund manager can ask for higher profit sharing such as 40%, versus the current hedge fund standard of 20%. He and Kou (2017) study the optimality of such a scheme and propose a modified new scheme.

(2) *Robotic financial advising:* How to get investor's risk aversion parameters by asking simple questions, and how to meet simple goals of investors, such as retirement and education saving, are challenging problems for robotic financial advising. In Dai et al. (2017), we provide a model to address these two issues.

Reference:

[1] X. D. He and S. G. Kou. Profit Sharing in Hedge Funds. Mathematical Finance, forthcoming.

[2] M. Dai, H. Jin, S.G. Kou, and Y. Xu. Consistent advices to financial advisors.