

Financial Forecasting Combining Human Crowds and Machine Learning Algorithms

Germán G. Creamer from Stevens Institute of Technology

Date/Time: 11/20/2019 at 1:00

Location: Leir Conference Room, CAB 3052

Abstract This paper explores the power of news sentiment to predict financial returns, in particular the returns of a set of European stocks. Building on past decision support work going back to the Delphi method this paper describes a text analysis expert weighting algorithm that aggregates the responses of both humans and algorithms by dynamically selecting the best response according to previous performance. The proposed system is tested through an experiment in which ensembles of experts, crowds and machines analyzed Thomson Reuters news stories and predicted the returns of the relevant stocks mentioned right after the stories appeared. The expert weighting algorithm was better than or as good as the best algorithm or human in most cases. The capacity of the algorithm to dynamically select best answers from humans and machines results in an evolving collective intelligence: the final decision is an aggregation of the best automated individual answers, some of these come from machines, and some from humans. Additionally, this paper shows that the groups of humans, algorithms, and expert weighting algorithms have associated with them particular news topics that these groups are good at making predictions from

Speaker Bio: Germán Creamer is an Associate Professor of quantitative finance and business analytics at Stevens Institute of Technology. Dr. Creamer has been a visiting scholar at Stern School of Business, NYU, and a senior manager in the Risk, Information and Banking Division in American Express where he worked in the enterprise-wide risk management and the information management groups. He has taught at Columbia University, Tulane University, Central University of Finance and Economics (China), University of International Business and Economics (China) and in several leading Latin American business schools. Dr. Creamer has been economic advisor to the president of Ecuador and the government of Equatorial Guinea, finance manager at Banco del Pacifico (the main bank of Ecuador), and program officer for the United Nations Development Programme. He has also consulted for several hedge funds and international organizations such as United Nations, World Bank, and US Agency for International Development. His articles have appeared in leading journals including Quantitative Finance, Computational Economics, Data Mining and Knowledge Discovery, IEEE Systems Journal, Energy Economics and Decision Support Systems. Dr. Creamer has a PhD in Computer Science (specialized on computational finance), a MSc in Financial Engineering, both from Columbia University, and a PhD in Economics from the University of Notre Dame. He earned the CFA (Chartered Financial Analyst) charter in 2002.