ICRA9
9th International Conference on Risk Analysis

BOOK OF ABSTRACTS

University of Perugia

Perugia, May 25-27, 2022

Book of Abstracts

9th International Conference
on
Risk Analysis

Editors:

Christos Kitsos
Teresa A. Oliveira
Francesca Pierri
Marialuisa Restaino

Perugia, 25-27 May, 2022

9th International Conference on Risk Analysis

Perugia, 25-27 May, 2022

Book of Abstracts

Editors: Christos Kitsos, Teresa A. Oliveira, Francesca Pierri, Marialuisa Restaino

Conference Website: http://icra9.unipg.it/

Conference E-mail: icra9@unipg.it

ISBN: 978-972-674-919-6

Data Science Training for Finance and Risk Analysis: A Pedagogical Approach with Integrating Online Platforms

Afshin Ashofteh

NOVA Information Management School (NOVA IMS), Universidade Nova de Lisboa, Campus de Campolide, 1070-312 Lisboa, Portugal, aashofteh@novaims.unl.pt

Abstract

The main discussion of this paper is a method of data science training, which allows responding to the complex challenges of finance. To create and deploy financial models for risk management, the ability to incorporate new data and Big Data sources, as well as benefit from emerging technologies such as web technologies, remote data collection methods, user experience Platforms, and ensemble machine learning methods, becomes increasingly important. Automating, analysing, and optimizing a set of complex financial systems requires a wide range of skills and competencies that are rarely taught in typical finance and econometrics courses. Adoption of these technologies for financial problems necessitates new skills, and knowledge about processes, quality assurance frameworks, technologies, security needs, privacy, and legal issues. In this paper, I discuss a pedagogical approach for data science training in finance and risk analysis, with a graphical summary of necessary skills. A case study of active learning and learning by doing for financial data science course is presented, following with the results of a teaching experience of this course, online and in-person, with a combination of different technologies and platforms in an integrated manner. The outcomes of an online Q/A on the Kaggle competition platform, an online book club, an online video platform, and an online discussion group for this course are presented with their advantages and disadvantages, and vulnerabilities.

Keywords

Data science, Finance, Risk, Pedagogical, Active learning.

References

Ashofteh, A., & Bravo, J. M. (2021a). A conservative approach for online credit scoring. *Expert Systems with Applications*, *176*, 114835. https://doi.org/10.1016/j.eswa.2021.114835.

Ashofteh, A., & Bravo, J. M. (2021b). Data science training for official statistics: A new scientific paradigm of information and knowledge development in national statistical systems. *Statistical Journal of the IAOS*, *37*(3), 771–789. https://doi.org/10.3233/SJI-210841.

Ashofteh, A., & Bravo, J. M. (2021c). Life Table Forecasting in COVID-19 Times: An Ensemble Learning Approach. *In 16th Iberian Conference on Information Systems and Technologies (CISTI)* (pp. 1–6). IEEE. https://doi.org/10.23919/CISTI52073.2021.9476583.

Ashofteh, A., Bravo, J. M., & Ayuso, M. (2021). A Novel Layered Learning Approach for Forecasting Respiratory Disease Excess Mortality during the COVID-19 pandemic. *In 21th Portuguese Association of Information Systems Conference, CAPSI 2021*. Retrieved from https://capsi2021.apsi.pt/index.php/en/.

Ashofteh, A., & Bravo, J. M. (2019). A non-parametric-based computationally efficient approach for credit scoring. *In Atas da Conferencia da Associacao Portuguesa de Sistemas de Informacao*. Associacao Portuguesa de Sistemas de Informacao. Retrieved from https://www.scopus.com/record/display.uri?eid=2-s2.0-85086641145&origin=inward&txGid=0e87a8c228db37a09073b1441dfffe9e.

Ashofteh, A. (2018). Mining Big Data in statistical systems of the monetary financial institutions (MFIs). *In International Conference on Advanced Research Methods and Analytics (CARMA)*. Valencia: Universitat Politecnica de Valencia. https://doi.org/10.4995/carma2018.2018.8570.