ENHANCED CHILEAN MUTUAL FUND DATA EXPLORER

Context And Why

1. Informes de Recomendacion (2020). Sura. SURA Asset Management. https://inversiones.sura.cl/nosotros/Paginas/informes-de-recomendacion.aspx
2. IPSA, Chile (2021). Btg Pactual. CME Group. https://www.mercadosenlinea.cl/www/chile/resume.html
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Objectives

1) Consolidate disparate sources of Chilean financial data

2) Apply unsupervised machine learning (ML) techniques to identify funds with abnormal risk/return profiles compared to their stated objective

3) Apply semi-supervised ML techniques to re-classify funds based on their historic performance vs. their stated objectives

4) Create a user interface (UI) to visualize distributions and key statistics of Chilean mutual funds, any identified abnormalities, and correlations of newly-clustered funds.

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5. James, G., Witten, D., Hastie, T., & Tibshirani, R. (2017). An introduction to statistical learning with applications in R. New York, N.Y: Springer.
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Innovation

4. Hastie, T., Tibshirani, R. & Friedman, J. (2009). Unsupervised learning. The elements of statistical learning (pp. 501-528). New York, New York: Springer Science+Business Media, LLC.
6. Mehta, D., Desai, D. & Pradeep, J. (2020). Machine learning fund categorizations. ArXiv.
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Risks

12. McConnell, S. (2004). Code Complete, Second Edition. Microsoft Press, USA.

Cost

Areas For Follow-up Work

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14. Li, B. & Rossi, A. G. (2020). Selecting Mutual Funds from the Stocks They Hold: A Machine Learning Approach http://dx.doi.org/10.2139/ssrn.3737667
15. Kyong Joo Oh, Tae Yoon Kim, Sungky Min (2005). Using genetic algorithm to support portfolio optimization for index fund management. Expert Systems with Applications, Volume 28, Issue 2, Pages 371-379, ISSN 0957-4174. https://doi.org/10.1016/j.eswa.2004.10.014
16. Guglietta, J. (2018). Support vector machine-based global tactical asset allocation. Big data and machine learning in quantitative investment (pp. 211-224). John Wiley & Sons, Ltd.

Team And Plan Of Activities

Team

- Pedro Ramirez
- Nagasree Chelamalla
- Christopher Santiago
- Shannon Flynn
- Collin Kruger

Activities

- Scrape Chilean Mutual Fund Data – Pedro
- Extract/Transform/Clean Data – Christopher, Collin, Nagasree, Pedro
- Implement Analytics Processing (ML, Statistics, Etc.) – Christopher, Collin, Nagasree, Pedro
- Design UI – Shannon
- Implement UI – Shannon
- Final Presentation/Poster - Team

17. Tufte, E. R. (2001). The visual display of quantitative information. Graphic Press.
18. Geraldi, J., & Arlt, M. (2015). Visuals Matter! Designing and using effective visual representations to support project and portfolio decisions. Project Management Institute.