TOPICS OF THE SEMINARS

Business Analytics & Data Science II°

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Mariusz Kicia, PhD, Associate Professor

Proposed areas:

1. Data analysis and ICT solutions for the Faculty of Economics (e.g. dashboards, data integration, data analysis, apps)
2. Capital market data analysis and application (e.g. testing investment strategies, portfolio management tools, market volatility analysis)
3. Analysis of investment risk tolerance (KYC / MiFID)
4. Bankruptcy risk prediction (with/without ML)
5. Fintech
6. Data analysis and ICT solutions for automated business valuation
7. Agent-based modeling
8. Road traffic data analysis in Lublin (data provided by Lublin City Hall)
9. Other, not included

Note: The seminar topics focus on financial market, corporate finance and financial behavior, but are not limited to it. Detailed topics are determined individually so that they are in line with your interests. The following sample topics have been conducted under my guidance: The role of experts in investment decision-making by customers of retail financial institutions; Analysis of the effectiveness of selected models for predicting corporate bankruptcy; Analysis of the importance of context for the perception of relevance of financial information in the light of the narrative economics; Culture and the level of financial crime - a cross-country analysis; Analysis of vehicle traffic at a selected intersection in Lublin using machine learning algorithms; Estimating Beta coefficients for banking industry stocks listed at the Warsaw Stock Exchange; Application of the Modern Portfolio Theory to solve stock portfolio optimization problem; Bankruptcy risk prediction using Altman Z-Score model; Evaluating the

effectiveness of advanced data analysis techniques in investments strategies in capital markets; Enhancing investment strategies using historical stock data and machine learning models; Predicting cryptocurrency price volatility using sentiment analysis; Mapping partner universities using structured and unstructured data; Vehicle traffic analysis in Lublin using open data. Milestones to pass each semester: Semester 1 – at least thesis concept (research area and problem to be solved, state-of-the-art review, methods, thesis structure, schedule, working topic). Semester 2 – at least data collection, data cleaning, preliminary or complete data analysis, completed chapter 1. Semester 3 – complete data analysis, the final solution & thesis (core text al least 30 pages, plus introduction, summary, lists of contents, appendix if applicable). You are invited to ongoing individual contact and thesis consultation despite regular seminar meetings.

Żukowska Beata, PhD

Proposed areas:

1. Building predictive models for classification problems (especially in the field of business, finance, social sciences, but not limited to them)
2. Building predictive models for regression problems (especially in the field of business, finance, social sciences, but not limited to them)
3. Evaluation of various clustering methods and their application (especially in the field of business, finance, social sciences, but not limited to them)
4. Explaining relationships within the data using various explanatory statistical models, including regressions, structural equation modeling, and others.
5. Feature engineering and feature selection for predictive and explanatory models.
6. Web scraping methods for obtaining valuable datasets and analyses on scraped data.