Credit Scoring - business process automation
Signature: 220311
Trainer: Dr. Karol Przanowski
Statistical Methods & Business Analytics
http://www.sgh.waw.pl/zaklady/zahziaw/

Schedule

Course nr	Date	Topic
1		Profitability of credit acceptance process. How we can earn millions money? Basic tools presentation.
1A - extra		Introduction to SAS, SAS 4GL basics
2		Data structures, default event, (ABT - Analytical Base Table), data partition
3		Modelling variables, their scales and types, binning, variable pre-selection.
4		Variable reports, multifactor variable selection.
5		Scorecard building, partial scores
6		Model assessment, the best model finding.
7		Model lifecycle, model monitoring (back testing).
8		Acceptance strategies, Acquisition and cross-sell business model.
9		How to run the project? Acceptance process simulation.
10		Calibration and cut-off calculation. Model and strategy documentation.
11		Portfolio segmentation, variable interactions and manual variable corrections.
12		Reject Inference
13		AI/ML models and techniques: XGBoosting and other like: Random forests, Deep learning
14		Elements of XAI, interpretation of AI/ML models, Shapley's method
The first day of session		Project deadline

Literature:

1. Karol Przanowski, Credit acceptance process strategy case studies - the power of Credit Scoring - https://arxiv.org/abs/1403.6531
2. Karol Przanowski, Consumer finance data generator - a new approach to Credit Scoring technique comparison - https://arxiv.org/abs/1210.0057
3. Karol Przanowski, Banking retail consumer finance data generator - credit scoring data repository, e–FINANSE, 9(1), pp. 44–59, 2013
4. Daniel Kaszyński, Bogumił Kamiński and Tomasz Szapiro, Credit scoring in the context of interpretable machine learning, 2020, https://ssl-kolegia.sgh.waw.pl/pl/KAE/struktura/IE/struktura/ZWiAD/publikacje/Documents/Credit_scoring_in_the_context_of_interpretable_machine_learning.pdf
5. Siddiqi N., 2005. Credit risk scorecards: Developing and implementing intelligent credit scoring. Wiley and SAS Business Series.
6. Thomas L. C., Edelman D. B., Crook J.N., 2002, Credit Scoring and Its Applications, Society for Industrial and Applied Mathematics, Philadelfia.
7. Basel Committee on Banking Supervision. Working paper no. 14, 2005. Studies on the validation of internal rating systems. Bank for International Settlements.
8. Lessmanna S, Seowb H V, Baesenscd B i Thomasd L C. 2013. Benchmarking state–of–the–art classification algorithms for credit scoring: A ten–year update. Credit Scoring Conference CRC, Edinburgh.
9. Anderson R, 2007. The Credit Scoring Toolkit: Theory and Practice for Retail Credit Risk Management and Decision Automation. Oxford University Press.
10. J. Bailer, Statistical Programming in SAS, SAS Institute 2010
11. Przemyslaw Biecek and Tomasz Burzykowski, Explanatory Model Analysis, 2020, https://pbiecek.github.io/ema/
12. R. Virgile, SAS Macro Language Magic: Discovering Advanced Techniques, SAS Institute 2013
13. SAS Institute Inc., SAS/STAT SAS Online Doc, SAS Institute Inc. http://support.sas.com/onlinedoc/913/docMainpage.jsp

All documents and material are available on Google disc:
https://drive.google.com/drive/folders/1qt9P3hK3anUuwu7XkQnNtAEccUDmWrlY?usp=sharing

How to get a pass:

Every student is expected to pass the following two steps:
- project - 20 points, the project should be presented, reports (documentations of models and the strategy) should be deliver by email to the trainer before the project defence
- exam theoretic (written form) – 20 points.
Minimal requirements to get a pass - 54% - 21 points.