

Dr. Yves R. Sagaert

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Business experience

- 2020 – Present VIVES University of Applied Sciences
Assistant Professor
Main activities: Applied research on predictive analytics with machine learning & AI (e.g. sales forecasting and student learning forecasting), mentoring PhD students, research contact with business, obtaining grants, lecturing, thesis supervision
- 2017 – 2020 Arcelor Mittal
Present *Strategic Innovation Manager for Harbour & Railway*
Main activities: Governance of eLearning, logistic optimisation, innovation via big data & analytics, track internal innovation projects, create a strategic vision to deploy self-driving trains in the next decade
- 2013 – 2017 Solventure
S&OP and Forecasting Research Consultant
Main activities: Provide executive training, design and teach forecasting courses to professionals in retail and Business-to-Business, start-up of Big Data pillar within the company, research interactions with global supply chain managers, start-up of new R&D team to valorize my PhD research

Education

- 2013 – 2017 **Doctor of Philosophy in Industrial Engineering and Operations Research**
Doctoral Training Programme, Ghent University
Thesis: “Improving accuracy and robustness of global tactical sales forecasts in a B2B environment”
I developed a framework to improve sales forecasts by including the most relevant external information, such as weather, promotions and market leading indicators in addition to the historical structure
- 2011 – 2013 **Master of Science in Industrial Engineering and Operations Research**
Ghent University, Ghent *Cum laude*
Thesis: “Enhancing sales forecasts through the use of adequate exogenous indicators: A case study”
- 2007 – 2011 **Bachelor & Master of Science in Electrotechnics and Automation**
University College West Flanders, Kortrijk *Magna cum laude*
Thesis: “Optimisation of Profibus network at Cargill Izegem”

Teaching experience

- 2020 – 2022 Assistant Professor at VIVES
Courses: Introduction to AI, Power BI, Python, Data Science, Practice Enterprise 1: Machine Learning
- 2016 – 2018 Advanced demand forecasting in Supply Chain Engineering, Ghent University, Faculty of Engineering and Architecture, Master of Science in Industrial Engineering and Operations Research
- 2013 – 2016 Advanced demand forecasting, Business course
Course in statistical models, multi-echelon inventory and promotional modelling
- 2013 – 2016 Business workshops and training: Forecasting analytics, Market intelligence, Demand sensing
These were given as in-company training at a.o. Agfa-Gevaert, Colruyt, CRU, Federal Mogul
- 2013 – 2018 Organise and present research seminars; Supervision of master theses
- 2014 – 2020 Tutoring
Statistics, data science, econometrics, marketing analytics, ...

Journal publications

Sagaert, Y. R., Kourentzes, N., De Vuyst, S., Aghezzaf, E. H., & Desmet, B. (2019). Incorporating macroeconomic leading indicators in tactical capacity planning. *International Journal of Production Economics*.

Sagaert, Y. R., Aghezzaf, E. H., Kourentzes, N., & Desmet, B. (2018). Tactical sales forecasting using a very large set of macroeconomic indicators. *European Journal of Operational Research*, 264(2), 558-569.

Sagaert, Y. R., Aghezzaf, E. H., Kourentzes, N., & Desmet, B. (2018). Temporal big data for tactical sales forecasting in the tire industry. *Interfaces*, 48(2), 121-129.

Sagaert, Y. R., Schaer, O. (2017). Business Forecasting: Practical Problems and Solutions. *International Journal of Forecasting*, 33(4), 1144-1145.

Working and draft papers

Sagaert, Y. R., Svetunkov, I. (2022). Trace Forward Stepwise: Automatic Selection of Variables in No Time. Working Paper of Department of Management Science, Lancaster University, 2022:1, 1-25.

Sagaert, Y. R., Svetunkov, I. (2022). A new approach to stepwise regression for a short fat data problem using semi-partial correlation.

Sagaert, Y. R., Kourentzes, N. (2022). The impact of tactical macro-economic market leading indicators on inventory management.

Conference papers

Sagaert, Y. R., De Vuyst, S., Kourentzes, N., & Aghezzaf, E. H. (2017). The impact of macroeconomic leading indicators for tactical sales forecasting on SKU inventory management. *In International Conference on Industrial Engineering and Systems Management-IESM 2017* (pp. 75-79). Wirtschaftswissenschaften HTW SAAR.

Other peer-reviewed publications

Kourentzes, N. & Sagaert, Y. R. (2018). Incorporating Leading Indicators into Sales Forecasts. *Foresight: The International Journal of Applied Forecasting*, (48)

Conference presentations

Sagaert, Y. R., Theodosiou, F. (2022), Information sharing via hierarchical modelling for collaboration in a retail supply chain, International Symposium of Forecasting (ISF).

Theodosiou, F., Sagaert, Y. R. (2022), Forecasting student exam results based on online activity and self-reported self-regulation: a partially interpretable machine learning approach, International Symposium of Forecasting (ISF).

Sagaert, Y. R., Kourentzes, N. (2022), From tactical forecasts with leading indicators to improved inventory management, International Symposium on Inventories (ISIR).

Theodosiou, F., Sagaert, Y. R. (2022), A hierarchical machine learning approach for an integrated supply chain with collaborative inventory management, International Symposium on Inventories (ISIR).

Sagaert, Y. R., (2021), From learning analytics to forecast learning: using students' digital footprint to improve learning, International Symposium of Forecasting (ISF).

Sagaert, Y. R., Kourentzes, N., De Vuyst, S. & Aghezzaf, E. H. (2018), The inventory impact of including macroeconomic leading indicators in global supply chain management, Proceedings of International Symposium of Forecasting (ISF).

Sagaert, Y. R., Kourentzes, N., De Vuyst, S. & Aghezzaf, E. H. (2017), The impact of macroeconomic leading indicators for tactical sales forecasting on SKU inventory management, Presented at International Conference on Industrial Engineering and Systems Management (IESM).

Sagaert, Y. R., Kourentzes, N., De Vuyst, S., Aghezzaf, E. H. & Desmet, B. (2017), The impact of macroeconomic leading indicators on inventory management, Proceedings of International Symposium of Forecasting (ISF).

Sagaert, Y. R., Kourentzes, N., De Vuyst, S., Aghezzaf, E. H. & Desmet, B. (2016), Incorporating macro-economic leading indicators in inventory management, Presented at International Society for Inventory Research (ISIR).

Sagaert, Y. R., Kourentzes, N., Aghezzaf, E. H. & Desmet, B. (2016), Variable selection for long term forecasting using temporal aggregation, Proceedings of International Symposium of Forecasting (ISF).

Sagaert, Y. R., Kourentzes, N., Aghezzaf, E. H. & Desmet, B. (2016), Sales forecasting with temporal big data: avoiding information overload for supply chain management, Presented at Institute for Operations Research and the Management Sciences (INFORMS) International.

Sagaert, Y. R., Kourentzes, N., Aghezzaf, E. H. & Desmet, B. (2015), Causal leading indicators detection for demand forecasting, Proceedings of European Conference on Operational Research (EURO).

Sagaert, Y. R., Kourentzes, N., Aghezzaf, E. H. & Desmet, B. (2015), Variable selection of exogenous leading indicators in demand forecasting, Proceedings of International Symposium of Forecasting (ISF).

Sagaert, Y. R., Kourentzes, N., Aghezzaf, E. H. & Desmet, B. (2014), Demand forecasting using exogenous leading indicators, Proceedings of International Symposium of Forecasting (ISF).

Research visits

- 2017 – 2019 Research visits
Centre for Marketing Analytics and Forecasting, Lancaster University Management School, United Kingdom
- Jan – March 2017 Research collaboration
Faculty of Business & Economics, Monash University, Melbourne
- May 2016 The value of external information: including leading indicators in sales forecasting
Higher school of Economics, Saint Petersburg State University, Russia
- March 2016 Tactical sales forecasting: the value of macro-economic leading indicators
Cardiff Business School, United Kingdom
- Jan – March 2016 Research collaboration
Centre for Marketing Analytics and Forecasting, Lancaster University Management School, United Kingdom
- Jan – March 2015 Research collaboration
Centre for Marketing Analytics and Forecasting, Lancaster University Management School, United Kingdom

Research grants

- 2021 Project: AI for sales forecasting in business with limited historical data (€123.200)
Internal funding awarded by VIVES via external business jury
- 2021 Project AI for education: Using AI to improve students' learning (€123.200)
Internal funding awarded by VIVES via external business jury
- 2014-2015 Various travel & workshop grants (€3.000)
Awarded by Doctoral School of Ghent University
- 2013 Baekeland Research grant (€405.200)
Awarded by the Agency for Innovation through Science and Technology (IWT)

Software packages developed

- Sagaert Y. R. (2021). *graffon: A GDPR anonymizer for any file using informed consent, encoding key and randomising numbers*. Python package version 0.1.8, <https://pypi.org/project/graffon/> (6.000+ downloads)
- Svetunkov I., Sagaert Y. R. (2020). *greybox: Toolbox for Model Building and Forecasting*. R package version 0.5.8, <https://github.com/config-i1/greybox> (16.000 downloads per month)

Skills

Computer Python, R, MATLAB, SPSS, SAS, Power BI, Tableau, MS Office, LaTeX, VB.Net, Python, Java, C#, Access, SQL, Visio, Photoshop, Gimp, Video editing, Step7, Autocad, ePlan, Maple, Windows, Linux, High Performance Computing, Hardware

Digitalisation Self-driving vehicles, LoRa, Private LTE/5G, UWB, SigFox, RFID, Lidar, Radar, Vision AI, iCare

Languages Dutch (Native Language) – English (Fluent) – French (Fluent) – German (Notion)

Varia Professional Competence for Road Transport Manager (ITLB Belgium and IRU Switzerland)
Member of International Institute of Forecasters (US)
Member of Operational Research Society (UK)
Member of Centre for Marketing Analytics and Forecasting (UK)

Referees

Available upon request.