

BART VAN ROMPAYE

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CURRENT POSITION:

HEAD OF ADVANCED ANALYTICS AND MACHINE LEARNING
KPMG BELGIUM

As a senior manager-data scientist with years of experience pushing the AI transformation both in the context of consultancy and at a large international bank-insurer, I am a team player who combines an analytical mind with a wide range of interests. Most companies are not reaping the full benefits of Artificial Intelligence, and I find my drive in organizing AI efforts to increase that value, in leading data science teams and mentoring data scientists, and in translating the hardest business problems into practical client-facing AI solutions. I also enjoy communicating about AI and Machine Learning, by organizing company efforts around AI education, by speaking about AI, and by teaching Machine Learning at a.o. the continuous education program of Ghent University (IPVW-ICES) and FLAMES (the Flemish Inter-university training network for methodology and statistics).

My **experiences** include

- defining and executing the data & AI strategy and governance (for KPMG Belgium and KBC Group)
- managing the AI team of a Big 4
- managing one of Belgium's biggest AI teams in a commercial context
- leading international teams of data scientists in delivering high-impact solutions with respect for legal, risk, and compliance concerns
- Collaboration on ideation and roadmapping with business side
- "Trusted AI": all aspects of AI regulations, ethics and risks, compliance, contacts with stakeholders
- creating and delivering AI training and inspiration programs for Board / C-level / management / staff
- delivering large data science projects in the context of large national and international companies
- international collaboration, both in project work and strategic development of teams
- project collaboration with vendors, start-ups and academia
- independent scientific research

Some of my **strong points** are

- strong communication skills, including intense interaction with C-level executives
- people management and mentoring for growth
- ability to collaborate with business to translate challenges into strong, practical AI solutions
- ability to move projects beyond PoC and into production
- ability to deliver excellent solutions in high-pressure circumstances
- a broad knowledge of the typical AI toolset
- a strong capability to apply such knowledge in different subject-specific fields

My projects have been valued at well over 60 million euros, and I have 4 patents pending.

CAREER

- HEAD OF ADVANCED ANALYTICS AND MACHINE LEARNING | KPMG BELGIUM | MAY 2021- CURRENT
- LEAD DATA SCIENTIST; PRIVACY, LEGAL, AND RISK LEAD | KBC GROUP NV | SEPTEMBER 2020- MAY 2021
- SENIOR DATA SCIENTIST, HEAD OF AI FOR INVESTMENTS AND REAL ESTATE | KBC GROUP NV | MARCH 2017- SEPTEMBER 2020
- LECTURER MACHINE LEARNING | 2017 - CURRENT
- DATA SCIENTIST | KBC GROUP NV | JUNE 2015 – MARCH 2017
- COORDINATION OF FLAMES PROJECT (50%) | GHENT UNIVERSITY | FEBRUARI 2013 – JUNE 2015
- POSTDOCTORAL RESEARCHER (50%) | UMEÅ UNIVERSITY, SWEDEN | FEBRUARI 2013 – JUNE 2015
- DOCTORAL RESEARCHER | GHENT UNIVERSITY | 2007 - 2012
- INTERNSHIP MEDICAL PHYSICIST | GHENT UNIVERSITY HOSPITAL | 2006 – 2007

EDUCATION

- PH.D. IN STATISTICAL DATA-ANALYSIS | GHENT UNIVERSITY
- MASTER IN STATISTICAL DATA-ANALYSIS | GHENT UNIVERSITY
- MASTER IN BIOMEDICAL AND CLINICAL ENGINEERING | GHENT UNIVERSITY
- MASTER IN PHYSICS AND ASTRONOMY | GHENT UNIVERSITY
- BACHELOR IN PHYSICS | HASSELT UNIVERSITY

CAREER

HEAD OF ADVANCED ANALYTICS AND MACHINE LEARNING | KPMG BELGIUM | MAY 2021- CURRENT

Leading the AI efforts within KPMG Belgium. Creating an AI vision, strategy and governance across all parts of KPMG Belgium. Part of the management team of the Lighthouse, KPMG's center for data-driven innovation. Building the AI team: attracting data scientists, developing an internal technical platform, organizing internal governance and standards, creating a technical culture, creating a go-to-market strategy. Leading AI projects for clients. Initiatives around Trusted AI. Collaboration within KPMG: educating on AI and its uses, collaborating with other services on projects and proposals. International collaboration. International lead on the offering concerning the AI Act. Communicating about the breadth of AI to the outside world.

LEAD DATA SCIENTIST; PRIVACY, LEGAL, AND RISK LEAD | KBC GROUP NV | SEPTEMBER 2020- MAY 2021

Defining and executing the central data and AI strategy of KBC, and its governance. Management of the international data science team of ca. 120 people across 6 countries. Defining the playing field for the usage of personal data for AI related to GDPR, privacy, and ethics. Organization of governance between the KBC Big Data team, and Legal and Compliance units. SPOC for Corporate Communication, risk, auditing, ECB and NBB when related to AI. Education and cultural change around AI. Leading solution development. Leading data science teams. Mentoring data scientists.

SENIOR DATA SCIENTIST, HEAD OF AI FOR INVESTMENTS AND REAL ESTATE | KBC GROUP NV | MARCH 2017- SEPTEMBER 2020

Managing and mentoring a highly diverse team of 9 data scientists, including 6 nationalities from diverse academic backgrounds. Defining and executing the AI program for investment business. Capacity planning, defining solution architectures and ensuring delivery. Day-to-day follow-up of execution. Management for the broader Belgian AI team of KBC of ca. 60 people, related to the growth of AI within KBC. Educating the organization about AI, and cultural transformation.

LECTURER MACHINE LEARNING | 2017 - CURRENT

- Ghent University, Institute for Continuous Education in the Sciences:
<https://www.ugent.be/we/en/services/ICES/courses/dataanalysis2020-2021/m11.htm>
- Flemish interuniversity training program FLAMES (Flanders Training Network for Methodology and Statistics):
<https://www.flames-statistics.com/summer-school/>

DATA SCIENTIST | KBC GROUP NV | JUNE 2015 – MARCH 2017

Creating AI solutions for business problems.

COORDINATION OF FLAMES PROJECT (50%) | GHEENT UNIVERSITY | FEBRUARI 2013 – JUNE 2015

Coordinating the inter-university FLAMES-project. Aligning strategy, teaching courses on statistics, organizing events and summer schools, administration, consultancy projects.

POSTDOCTORAL RESEARCHER (50%) | UMEÅ UNIVERSITY, SWEDEN | FEBRUARI 2013 – JUNE 2015

Research on methodology for benchmarking the quality-of-care offered in hospitals. Supervising PhD and master students, as well as supervising a project on scientific outreach.

DOCTORAL RESEARCH | GHENT UNIVERSITY | 2007 - 2012

Doctoral research on time-to-event data, study design, high dimensional (genetic) data and causal inference. Consultancy for government, business, and academia. Teaching courses in advanced statistics. Guiding bachelor and master theses. Communication of results, writing grant applications, international collaboration.

INTERNSHIP MEDICAL PHYSICIST | GHENT UNIVERSITY HOSPITAL | 2006 – 2007

A one-year part-time internship as a medical physicist at the department of Radiotherapy. Performing technical duties, teamwork with doctors and nurses, contacts with patients.

EDUCATION

PH.D. IN STATISTICAL DATA-ANALYSIS: EXPLAINING TIME TO CAUSE-SPECIFIC EVENTS: UNCOVERING INFORMATION AMIDST NOISE AND ERRORS IN AN IMPERFECT WORLD | GHENT UNIVERSITY

2007 – 2012

MASTER IN STATISTICAL DATA-ANALYSIS | GHENT UNIVERSITY

2005 – 2007, Greatest distinction

MASTER IN BIOMEDICAL AND CLINICAL ENGINEERING | GHENT UNIVERSITY

2005 – 2007, Great distinction

MASTER IN PHYSICS AND ASTRONOMY | GHENT UNIVERSITY

2003 – 2005, Distinction

BACHELOR IN PHYSICS | HASSELT UNIVERSITY

2000 – 2003

MY PROJECTS

AI STRATEGY AND GOVERNANCE

- AI strategy and governance, KPMG Belgium
Creating the AI strategy and governance across KPMG Belgium, with separate focus on the potential of Generative AI.
- AI strategy and governance, KBC Group
Part of the creation and management of the creation of the data and AI strategy and governance for KBC Group.

AUTOMATED INVESTMENT SERVICES (ROBO-ADVISORS)

- Optimum Fund Enhanced Intelligence (ISIN-code BE6316179249)
<https://www.tijd.be/markten-live/fondsen/portefeuille/kbc-lanceert-eerste-zelflerende-fonds-in-belgie/10263802.html>
Creating the first AI-driven investment fund in Belgium, which is also a core element of the flagship investment strategy of KBC groupwide.

- **Matti**
<https://www.boleromatti.be/nl>
Creating a commercial robo-advisor for investments.
- **Indigo**
<https://indigo.patria.cz/>
International smart-copy of the robo-advisor Matti.

AI-DRIVEN REAL ESTATE APPLICATIONS

- Creating a tool for automated valuation of real estate (houses, apartments, lands).
- Creating a valuation tool for real estate in the context of risk regulations for home credits.

AUTOMATED PRICING SOLUTIONS

- **Generic automated pricing within KBC**
Genericizing the pricing logic mentioned below to support the automated personalized pricing of the majority of retail products of KBC.
- **Mortgages**
<https://www.spaargids.be/sparen/kbc-bank-lenen/kbc-keurt-woonlening-in-tien-minuten-goed.html>
Creating an AI system for automated, highly personalized pricing logic. Currently, more than 25% of KBC mortgages are sold through a straight-through digital process, with automated personalized pricing.
- **Credit-linked insurances**
An automated pricing logic for digital sales of credit-linked insurances.
- **Credit pricing**
Delivering the first automated pricing solution in a fully digital process in KBC.

FAIRNESS AND TRUSTED AI

- **International Lead 'AI Act'**
International content lead for the integration of the upcoming AI Act in the commercial offer of KPMG
- **Trusted AI framework**
Creating a commercial offer around a framework for Trusted AI
- **Trusted AI framework**
Creating and implementing a governance to comply with regulations concerning AI (e.g. the European Commission white paper on Artificial Intelligence).
- **Fairness framework**
Devising an approach to check whether the KBC AI models are 'fair' from a technical perspective, including causal inference.
- **Due diligence**
AI due diligence for the purchase of an AI consultancy by a larger company.

AUTOMATION

- IT test automation tool
Creating and delivering a machine learning tool for IT test automation for a client in the energy sector.
- Ticket handling automation
Creating a smart solution in Azure to extract information from email-based tickets for a customer support center of a public utilities company. Information extraction from unstructured data (email body, scanned forms), and agile delivery of support to customer support.

COMMUNICATION

- Internal training of KBC management
Creating and giving a training of 2 full days on AI, mandatory for all KBC Board of Directors, Executive Committee, (General) Managers, and top talents
- Internal training of KPMG management and staff
Creating and giving trainings on AI (e.g. recognizing AI opportunities, creating a data-driven business, Generative AI,...) for all KPMG management and staff
- Internal training of data scientists internationally
Setting up a 6-monthly 3-day bootcamp with all data scientists and supporting functions groupwide. Defining the program, creating and delivering training, hiring international speakers.
- Internal training of legal and compliance functions
Training legal and compliance functions on the practice of AI, and the impact on the interpretation of the GDPR.
- Diverse talks
I am regularly called upon by the KPMG network to be involved in events, workshops, and brainstorming, from Board level to staff level

CUSTOMER PROFILING

- Customer segmentation
Creating operational segments for the client base of a Belgian mutuality.
- Risk profiling of customers
Predicting customer answers in MiFID risk questionnaire.
- Loss profiling of customers
<https://newsroom.kbc.com/met-cozi-kunnen-kbccbc-klanten-beleggen-binnen-hun-comfortzone>
Devising a unique automated loss profile, next to the MiFID risk profile.
- AI driven customer journeys
<https://www.kbc.be/particulieren/nl/product/beleggen/beleggingsfondsen/laten-beleggen.html>
Creating an intelligent, automated process to support savers and small investors in their journey to increase their investments.

RISK

- **Creation of a new Anti-Money Laundering solution**
Creating a novel AI approach to client risk and KYC, including advanced transaction screening, for a big Belgian bank.
- **Validation and commercialization of KYT screening solution**
Part of the creation of DISCAI, KBC's AI-as-a-service spinoff, focusing first on a machine learning solution for transaction screening in the context of fraud detection.
- **Updating scenarios for AML screening**
Performing above the line evaluation of existing AML scenarios, tuning of scenario settings, and optimization of scenario definitions.
- **Credit scoring for SMEs**
Delivering the first Machine Learning model within KBC in the context of credit scoring for SME credits.

COMMERCIALIZATION

- **Fraud detection system**
Preparing the go-to-market and commercialization of Althing, the KYT solution of DISCAI, KBC's AI-as-a-Service spinoff.

MISCELLANEOUS

- **Credit scoring for SMEs**
Delivering the first Machine Learning model within KBC in the context of credit scoring for SME credits.
- **Automated investment forecasting and quant funds**
Supporting the change of quantitative investment funds in KBC from traditional statistical models to machine learning algorithms.
- **AI-driven carbon emissions estimates**
Experiment to assess possibilities to use AI to comply with Paris agreements. Basic PoC's are currently being translated into execution projects.

SKILLS

PROGRAMMING LANGUAGES

- Mainly Python, R, Spark, SAS, SPSS, SQL

LANGUAGE SKILLS

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|-----------|------------------|----------|---------|
| ▪ Dutch | Native | ▪ French | Basic |
| ▪ English | Fluent (CEFR C1) | ▪ German | Notions |

INTERNATIONAL EXPERIENCE

- Collaboration with KPMG Netherlands, KPMG Luxemburg, and KPMG Global, international workgroups.
- Collaboration with the various KBC countries: Ireland, Czech Republic, Hungary, Slovakia, Bulgaria.
- Project collaboration with the various KBC countries, e.g. creation of Indigo robo-advisor.
- Halftime position at Umeå University, Sweden, 2013-2015
- Collaborations and work visits to London School of Hygiene & Tropical Medicine (UK, 2008-2011), Harvard University School of Public Health (U.S., 2008), Oslo University (Norway, 2007)
- International conferences and workshops

SCIENTIFIC PUBLICATIONS

- Dalle S, De Smet S, Geuns W, **Van Rompaye B**, Hespel P, Koppo K. Effect of stacked sodium bicarbonate loading on repeated all-out exercise. *International journal of sports medicine*. 2019; **40**(11): 711-6.
- **Van Rompaye B**, Eriksson M, Goetghebeur E. Evaluating hospital performance based on excess cause-specific incidence. *Statistics in Medicine*. 2015; **34**(8): 1334-50.
- Lambert ML, Silversmit G, Savey A, Palomar M, Hiesmayr M, Agodi A, **Van Rompaye B**, Mertens K, Vansteelandt S. Preventable fraction of healthcare-acquired infections in European intensive care units: estimations from patient-based surveillance data. *Infection Control and Hospital Epidemiology*. 2014; **35**: 494-501.
- Eriksson M, Asplund K, **Van Rompaye B**, Eliasson M. Differences in cardiovascular risk factors and socioeconomic status do not explain the increased risk of death after a first stroke in diabetic patients: results from the Swedish Stroke Register. *Diabetologia*. 2013; **56**: 2181-2186.
- Blockhuys S, **Van Rompaye B**, De Rycke R, Lambein K, Bracke M, De Wagter C, De Wever O. Radiation-induced myosin IIA-dependent collagen type I matrix reorganization affects breast cancer cell death. *Radiotherapy and Oncology*. 2013; **108**: 162-167.
- **Van Rompaye B**, Jaffar S, Goetghebeur E. Estimation With Cox Models Cause-specific Survival Analysis With Misclassified Cause of Failure. *Epidemiology*. 2012; **23**: 194-202.
- **Van Rompaye B**, Goetghebeur E, Jaffar S. Design and testing for clinical trials faced with misclassified causes of death. *Biostatistics*. 2010; **11**: 546-558.
- Buyze J, **Van Rompaye B**, Goetghebeur E. Designing a sequentially randomized study with adherence enhancing interventions for diabetes patients. *Statistics in Medicine*. 2010; **29**: 1114-1126.
- Crop F, **Van Rompaye B**, Paelinck L, Vakaet L, Thierens H, De Wagter C. On the calibration process of film dosimetry: OLS inverse regression versus WLS inverse prediction. *Physics in Medicine and Biology*. 2008; **53**: 3971-3984.