Erik Jan de Vries

Generative AI & MLOps | AI Product Development | AI Strategy

AI Capability Builder | Architect | Engineer

Key words

Results-oriented
Strategic thinker
Innovation mindset
Agile approach
Strong communication skills
Team player

MLOps
Generative AI
Responsible AI
Marketing Analytics

Education

PhD	Mathematical Physics, Heriot-Watt University Edinburgh, UK
MSc	Theoretical Physics, Leiden University (cum laude, GPA 8.5)
TVWO	Bilingual high school English / Dutch (cum laude, GPA 9)

Contact details

Hidden on public CV

linkedin.com/in/erikjandevries

Award-winning AI & MLOps expert

With over 14 years of experience in AI and MLOps, I have a proven track record of developing innovative AI solutions that drive business value. Notably, I led the creation of the award-winning Next Best Action marketing solution for Eneco, significantly enhancing their customer contact strategy.

I have developed a comprehensive framework integrating **business**, **organisation** and **technology**, enabling me to:

(1) Embed data-driven decision-making into all types of business processes.
(2) Build effective AI solutions, focusing on business value.
(3) Create environments for success with data and analytics.

My expertise includes advising organisations on the implementation and integration of Generative AI and machine learning, as well as the design and development of technical solutions. Through extensive handovers and trainings, I empower my clients to effectively manage the systems I deliver on their own. As an AI strategy consultant, I define future ambitions, create roadmaps, and implement tools to monitor progress. I excel in stakeholder management, ensuring effective solution implementation as well as smooth collaboration between all parties involved.

In my spare time, I love playing the piano. A highlight in my musical career was performing Gershwin's Rhapsody in Blue at the concert hall in Haarlem. In 2021, I became the proud father of a beautiful little girl.

Highlights

2024	Designed and built the MLOps platform (Azure ML)	Van Oord
2024	Led the vendor selection process for a RAG application, challenging vendors on their proposed GenAI solutions	Van Oord
2022	Designed and built the MLOps platform (GCP)	Liberty Global
2020	Created the Next Best Action Marketing solution (Azure) which **won the Data Driven Marketing Award 2023**	Eneco

Work experience

2023 – 2024 **Freelance consultant AI & MLOps, architect, engineer** Tadata

2022 – 2023 **Practice lead Data & Analytics** Triple A - Risk Finance

Led the Data & Analytics practice, defining a strategy for growth and team development. Managed a team of data professionals, providing coaching and mentorship, and ensuring high-quality deliverables for clients. Led analytics and reporting initiatives, utilising advanced techniques to provide valuable insights and recommendations to clients. Collaborated with cross-functional teams and clients to identify opportunities for data-driven optimisation and innovation in their business processes.

2018 – 2022 **Lead data scientist, consultant** BigData Republic

Co-developed the BigData Republic methodology, acted as coach, mentor and trainer.

Advised clients as all-round expert: developing the analytics strategy, interim manager data science, member of a Digital Transformation steering committee, developing analytics skills and technologies, data science project lead, machine learning architect, analytics translator, commercial product development, coach, mentor, trainer.

2016 – 2017 **Chief data scientist, consultant** Future Facts

Responsible for the technological roadmap, methodology, coaching and supervising data scientists and data engineers, and knowledge sharing and skills development.

Advised clients on predictive analytics, developed machine learning models.

2015 **BI and data science consultant** i3, Tadata & CGI

2010 – 2014 **Business Intelligence and Data Analytics specialist** Kas Bank

2009 **Strategy consultant** Strategy Development Partners

Projects

2023 – 2024 **MLOps platform** Van Oord

Extended the Data Platform with an MLOps capability using Azure ML. Designed and architected the solution. Led the implementation of the infrastructure and the first ML pipeline to serve as template for future projects. Created a roadmap for further development of the platform.

2024 **Workshops: Generative AI with Microsoft Copilot** Van Oord

Conducted workshops on Generative AI using Microsoft Copilot, focusing on prompt engineering for Large Language Models (LLMs). Designed and delivered training sessions, demonstrated practical use cases, and facilitated hands-on exercises.

2024 **Retrieval-Augmented Generation (RAG)** Van Oord

Developed a proof of concept for a Retrieval-Augmented Generation (RAG) system using LLMs via the OpenAI API and a Qdrant vector database.

Led the vendor selection process, refining the Request for Proposal (defining project objectives, technical requirements, and evaluation criteria), evaluating proposals, conducting interviews, and facilitating discussions to identify the best-fit solution provider. Challenged suppliers on their Generative AI solutions to ensure high quality and optimal implementation, aligning with the strategic goals of the organisation.

2023 **Bias mitigation with Adversarial Learning** Triple A - Risk Finance

Built a solution for bias mitigation with Adversarial Learning using both TensorFlow / Keras and PyTorch, developing our Responsible AI proposition.

2023 **GenAI, analytics and data strategy** Triple A - Risk Finance

Developed the Generative AI, analytics and data strategy for the Data & Analytics team, with a focus on potential business propositions for clients and prospects.

2021 – 2022 **Operational Data Hub, Technology Deployment Analytics** Liberty Global

Advised the CTO and senior management on a migration to the cloud, developed the machine learning architecture using MLOps on Google Cloud Vertex AI, and trained the internal team in the new way of working while implementing and deploying the first project in production using fully automated CI/CD pipelines in the new architecture.

2020 – 2021 **Next Best Action Marketing** Eneco

With this solution, Eneco won the Data Driven Marketing Award 2023.

Designed the Next Best Action architecture and end-to-end solution, created a proof-of-concept and an implementation roadmap, and acted as technical lead of a cross-functional team developing and implementing the solution. The modular design allowed for an incremental and agile approach.

Stakeholder management in the Digital Transformation programme, aligning the NBA initiative with other projects, such as the implementation of a new CRM system.

The architectural board selected my solution for their target architecture, favouring it over popular commercial products such as Pega.

2019 – 2021 **Data science platform** Eneco

In collaboration with the internal lead engineer, created a DevOps data science platform on Microsoft Azure and Snowflake. Successfully challenged the Boston Consulting Group (BCG) on their proposed solutions for building ML models. Coached and led various data science teams.

2018 – 2019 **Customer analytics and finance analytics** KLM

Led and coached two data science teams for Customer and Finance (using SAFe Scrum).

In one project, I extracted topics and sentiment from free format text feedback from customers using BERT, to provide focus for customer service improvement projects.

2018 **Image segmentation** Nutreco

Set up a deep learning framework for the development of an image segmentation model of microscope photos of fodder (using TensorFlow / Keras).

2016 – 2017 **Advanced analytics platform, marketing analytics** Vodafone Ziggo

Co-designed and -developed the advanced analytics platform, using MapR Hadoop and Spark. Built data and ML pipelines using Python and R. Designed the analytics way-of-working for the new platform.

Other experience

2023	Presented at the VSAE Actuary Conference on ethical and explainable AI.
2019	Won 1st prize at KLM Data Science Community Demo Festival
2016, 2017	Taught guest lectures on Data Science at Fontys University of Applied Sciences.
2012 – 2014	KasXchange (Young Professionals Kas Bank): first treasurer, then president.
2009	Represented Heriot-Watt University at an interdisciplinary, national conference.
2006, 2007	Co-organised the Post Graduate Research Conference, Heriot-Watt University.
2001 – 2002	Board member Sempre Crescendo, a students' music society.

Publications

2024	**When and how Jupyter Notebooks fail, and what to use instead**, Erik Jan de Vries https://erikjandevries.medium.com/when-and-how-jupyter-notebooks-fail-and-what-to-use-instead-a52c27dbaa4c
2024	**Empowering Efficiency: Building a Self-Service Platform for Analytics**, Erik Jan de Vries https://erikjandevries.medium.com/empowering-efficiency-building-a-self-service-platform-for-analytics-9a28349ea0c6
2024	**The Power of MLOps: Benefits for Business Leaders and Managers**, Erik Jan de Vries https://erikjandevries.medium.com/the-power-of-mlops-eccdef9ef5f6
2024	**Defining Machine Learning and MLOps**, Erik Jan de Vries https://erikjandevries.medium.com/defining-machine-learning-and-mlops-d2b0e8325959
2020	**Data science is boring**, Erik Jan de Vries https://medium.com/bigdatarepublic/data-science-is-boring-1756a7be1899
2012	**Rhapsody in Blue (Gershwin)**, Erik Jan de Vries, de Amsterdamse Tramharmonie http://www.youtube.com/watch?v=lJsnGprFRa8
2010	**Supercharges, Quantum States and Angular Momentum for N=4 Supersymmetric Monopoles**, Erik Jan de Vries, Bernd J. Schroers (published in Nucl.Phys.B)
2008	**Supersymmetric Quantum Mechanics of Magnetic Monopoles: A Case Study**, Erik Jan de Vries, Bernd J. Schroers (published in Nucl.Phys.B)

TECH SKILLS

Cloud Platforms

- Microsoft Azure
- Google Cloud Platform

Software development and programming

- Source code version control: Git, GitHub, GitLab, Subversion (SVN)
- CI/CD pipelines: GitHub Actions, Azure DevOps, Google Cloud Build
- Python: numpy, pandas, scikit-learn, matplotlib, etc.
- R: dplyr, ggplot2, caret, data.table, shiny, etc.
- C#, VBA, DAX (Power BI), MDX (SSAS)
- Shell scripting: bash, zsh, PowerShell
- Jupyter Notebooks, Jupyter Lab

Machine Learning and MLOps

- Classification, regression, recommender systems, gradient boosted trees: XGBoost, LightGBM
- Neural networks and deep learning: TensorFlow, Keras, PyTorch
- Image classification and segmentation, object detection: CNN, U-Net
- Time series analysis: Prophet, RNN, CNN
- Reinforcement learning: Deep Q-Learning
- Natural Language Processing (NLP): Transformers, BERT, GPT
- MLOps platforms: Azure ML, Vertex AI, Kubeflow, Airflow, MLflow
- A/B testing, statistical analysis, fairness, feature importance: Shapley analysis (SHAP)
- Virtualisation / containerisation: Docker, Kubernetes (K8s), Hyper-V, VirtualBox

Data Engineering and Data Analysis

- SQL and relational databases: Microsoft SQL Server, Oracle, Postgres/PostgreSQL, Google Cloud SQL
- ETL processes and data pipelines: SSIS, dbt, Apache Airflow
- Data warehouses: Data Vault, Dimensional modelling, Google BigQuery
- Data lakes: HDFS, Google Cloud Storage, Azure Data Lake
- Distributed computing: Apache Hadoop, HDFS, Hive, MapR, Spark
- Streaming data: Kafka, Google Cloud Pub/Sub
- Data quality: dbt, Great Expectations
- Data visualization: matplotlib, seaborn, plotly, ggplot2
- Business Intelligence: Power BI

Generative AI

- OpenAI ChatGPT, Microsoft Copilot, Prompt engineering
- Retrieval-Augmented Generation (RAG), Large Language Models (LLMs), LangChain
- Vector databases: Qdrant

Workflow and project management

- Atlassian: Confluence, Jira, BitBucket
- Agile project management: Scrum, Scaled Agile Framework (SAFe), Kanban