

Klest Dedja, PhD

Applied AI and Machine Learning Engineer

Enterprise AI | LLM Evaluation | Forecasting | Explainable ML | Research Software

[Portfolio](#) | [LinkedIn](#) | [GitHub](#) | [Google Scholar](#) | [ORCID](#)

Profile

Applied AI and machine learning professional with experience across enterprise AI, time-series forecasting, explainable machine learning and research software. Builds and evaluates systems from problem formulation and experimentation through validation and usable implementation. Combines an applied-mathematics foundation with product-oriented engineering, interdisciplinary communication and experience working in startup, consulting, financial and healthcare settings.

Core Capabilities

RAG and LLM evaluation | Machine-learning experimentation | Time-series forecasting | Explainable AI | Model validation | Research-to-software transfer | Technical stakeholder communication

Experience

Data Scientist - SmartLab Mar 2026–Present
CGI The Netherlands

- Develop a retrieval-augmented generation application, contributing across prompt behaviour, retrieval, automated LLM alignment evaluation and React front-end features.
- Design evaluation practices with attention to reliability, alignment and practical usability.
- Mentor colleagues and translate open-ended stakeholder needs into testable technical work.

AI Research Engineer 2024–2025
Predikt.ai Belgium

- Converted business forecasting problems into technical specifications, feasibility studies and structured experimentation plans.
- Developed and benchmarked time-series approaches in Python, selecting modelling and validation strategies according to data characteristics and intended use.
- Improved forecasting model accuracy by 7% after introducing a novel regularisation approach and worked with conformal prediction methods for uncertainty estimation.

PhD Researcher - Machine Learning and Artificial Intelligence 2019–2024
KU Leuven - ITEC, imec research group Belgium

- Designed explainable-AI and active-learning methods for complex prediction tasks, with emphasis on survival analysis and trustworthy model adoption.
- Created Bellatrex, a local rule-extraction method for Random Forest ensembles, and evaluated it across 89 real-world datasets and five prediction settings.
- Translated the research into maintained open-source software with tests, documentation, tutorials and a PyPI release workflow.
- Developed and validated machine-learning workflows with clinical and scientific collaborators and communicated results across disciplines.
- Supervised research projects and Master's theses and taught machine learning in the Advanced Master of AI for Business and Industry.

Credit Risk Modelling Intern 2018–2019
ABN AMRO The Netherlands

- Tested and enhanced methods for interpreting black-box credit-risk predictions and validated findings with domain experts.

Selected Work

- Bellatrex - Explainable AI research software** | *Python, tree ensembles, rule extraction*2021–Present
 - Built a framework that explains individual Random Forest predictions with a small, diverse set of representative rules while preserving fidelity to the underlying ensemble.
 - Published the method in IEEE Access and maintain the package, API, tests, documentation, tutorials and release workflow.
- Enterprise RAG application** | *LLMs, retrieval, evaluation, React*2026–Present
 - Contribute across retrieval, prompt behaviour, automated alignment evaluation and interface development for an enterprise AI application.
- Financial forecasting R&D** | *Python, validation, uncertainty estimation*2024–2025
 - Benchmarked forecasting approaches and matched modelling and validation choices to business scenarios, data limitations and decision use.
 - Improved prediction accuracy by 7% through regularisation and developed uncertainty estimates using conformal prediction methods.
- Healthcare and biomedical ML** | *Survival analysis, XAI, computer vision*2021–Present
 - Contributed to machine-learning work in multiple sclerosis, kidney function, acute kidney injury and biomedical image analysis with clinical and scientific collaborators.
 - Placed second with a multidisciplinary team in the 2024 ESICM Digital Critical Care Datathon.

Education

- KU Leuven**Belgium
 - Doctor in Biomedical Sciences - Machine Learning and Artificial Intelligence*2019–2024
 - Thesis: *Supporting adoption of AI in Survival Analysis, with use of Explainable AI techniques and Active Learning.*
- Delft University of Technology**The Netherlands
 - MSc (Ir.) in Applied Mathematics - Financial Engineering*2017–2019
- University of Udine**Italy
 - BSc in Mathematics*2013–2016

Selected Research Outputs

- **K. Dedja**, F. K. Nakano, K. Pliakos and C. Vens. *BELLATREX: Building Explanations Through a Locally Accurate Rule Extractor*. IEEE Access, 2023.
- J. de Boer, **K. Dedja** and C. Vens. *SurvivalLVQ: Interpretable supervised clustering and prediction in survival analysis via Learning Vector Quantization*. Pattern Recognition, 2024.
- R. D’hondt, **K. Dedja**, S. Aerts, et al. *Explainable time-to-progression predictions in multiple sclerosis*. Computer Methods and Programs in Biomedicine, 2025.

Technical Skills

- AI and modelling:** RAG, LLM evaluation, explainable AI, survival analysis, active learning, time-series forecasting, statistical modelling, computer vision, feature engineering, model validation and optimisation
- Programming and ML:** Python, R, SQL, Bash, Linux; scikit-learn, scikit-survival, XGBoost, PyTorch, statsmodels, Nixtla, SciPy, Optuna, pandas, Polars, SHAP, LIME, scikit-image
- Engineering and delivery:** Git/GitHub, GitHub Actions, PyPI packaging, testing, documentation, reproducibility workflows, Azure DevOps, Streamlit and React
- Languages:** Italian (native), English and French (fully proficient), Dutch (very good), Albanian (heritage)