

# Jari Peeperkorn

## Curriculum Vitae

### PERSONAL DETAILS

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*Nationality* Dutch  
*Birth* July 14, 1995 (Leuven, Belgium)  
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*Website* <https://jaripeeperkorn.github.io/>

### EDUCATION

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#### PhD Business economics

2019-2023

*KU Leuven*

PhD at the Research Centre for Information Systems Engineering (LIRIS), working on process mining and machine learning. Also following courses on different data science topics.

#### MSc. Astronomy and Astrophysics *cum laude*

2016-2019

*KU Leuven*

Combination of courses in astrophysics, observational astronomy, and theoretical high energy physics. Master thesis at centre for mathematical plasma-astrophysics: using LSTM neural networks to forecast geomagnetic storms.

#### BSc. Physics

2013-2017

*KU Leuven*

A general bachelor in physics. Minor: astronomy and informatics.

### EXPERIENCE

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#### FWO Postdoctoral Researcher

2024-...

*Host: KU Leuven*

FWO junior postdoctoral fellowship on the project of “Robust Multi-Modal Prediction in Business Processes”

#### Postdoctoral Researcher

2023-2024

*KU Leuven*

Postdoctoral researcher at the Research Centre for Information Systems Engineering (LIRIS), working on process model forecasting, process mining, and machine learning.

#### PhD researcher

2019-2023

*KU Leuven*

PhD at the Research Centre for Information Systems Engineering (LIRIS), working on process mining and machine learning.

## Student Job

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### Tutor

2016-2018

*Slaagsleutels*

Tutor in physics for high school students participating in the admission test for Medicine.

## Experience as volunteer

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### Student representative

2015-2019

*KU Leuven*

Student member POC of physics (2015-2016, 2017-2019), Student member OC of astronomy and astrophysics (2016-2019) Student member department council physics and astronomy (2015-2019) Student member faculty council sciences (2016-2019), member student council Stura (2015-2019)

### Member of presidium

2014-2017

*Wina Leuven vzw*

Member of the presidium of Wina Leuven vzw in multiple functions: Media (responsible), Big activities, Business relations and Logistics.

### Animator

2012-2014

*Speelplein Boven-Lo*

Animator for kids in the summer (with certificate).

## SKILLS

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### Languages

Dutch (mother tongue)  
English (full professional proficiency)  
French (Limited working proficiency)  
German (Elementary proficiency)

### Software

L<sup>A</sup>T<sub>E</sub>X, Celonis, OFFICE, LINUX, Maple

### Programming

Python (good)  
Java (basic)  
Matlab (basic)  
C (basic)  
SQL (basic)

### Skills

Machine Learning  
Process Mining  
Scientific Writing

### Certificates

"Introduction to Machine Learning for scientists", Prace winter School.  
"HPC intro", "Python for HPC" and "Scientific Python",  
(VSC training sessions), 2018-2019  
"Initiator attest trainer korfbal, BLOSO" (trainer sport), 2013  
"Animator in het jeugdwerk" (animator for youth), 2012

## **AWARDS, ACKNOWLEDGEMENTS AND AWARDED GRANTS**

### **Awarded FWO grant Junior postdoctoral fellowship**

For the project “Robust Multi-Modal Prediction in Business Processes” I have received 3 years funding (starting in October 2024).

### **Best Paper 2nd International Workshop on Leveraging Machine Learning in Process Mining (ML4PM)**

Won best paper together with Seppe vanden Broucke and Jochen De Weerdts for work titled “Can deep neural networks learn process model structure? An assessment framework and analysis”

### **Winner best PhD team at Datathon 2020**

Our team won the prize for best PhD team at the datathon for our application: Clean Air Route Finder, which could be used to find the route between two places in Leuven on which you would breathe in the least particulate matter.

## LIST OF PUBLICATIONS

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### Journal publications

Peeperkorn J., vanden Broucke, S., & De Weerd, J. Validation Set Sampling Strategies for Predictive Process Monitoring, Information Systems, Volume 121 (2024)

Peeperkorn, J., vanden Broucke, S. & De Weerd, J. Global Conformance Checking Measures Using Shallow Representation and Deep Learning, Engineering Applications of Artificial Intelligence, Volume 123, Part B (2023)

Peeperkorn, J., vanden Broucke, S. & De Weerd, J. Can recurrent neural networks learn process model structure?. J Intell Inf Syst (2022). <https://doi.org/10.1007/s10844-022-00765-x>

### Conference proceedings

Yu Y., Peepkorn J., De Smedt J. & De Weerd J., Multivariate Approaches for Process Model Forecasting, Process Mining Workshops (ML4PM), ICPM 2024

Neubauer T. R. , Peepkorn J., Peres S. M., De Weerd J. and Fantinato M., Vector Representation for Business Process: Graph Embedding for Domain Knowledge Integration, 2023 International Conference on Machine Learning and Applications (ICMLA), Jacksonville, FL, USA, 2023

Adams J. N., Peepkorn J, Brockhoff T., Terrier I., Göhner H., Uysal M. S., vanden Broucke S., De Weerd J. & van der Aalst W. M. P., Discovering High-Quality Process Models Despite Data Scarcity, ER Forum 2023

Stevens A., Peepkorn J., De Smedt J. & De Weerd J., Manifold Learning for Adversarial Robustness in Predictive Process Monitoring, ICPM 2023

Peeperkorn J, Vázquez C.O., Stevens A., De Smedt J., vanden Broucke S. & De Weerd J. (2023) Outcome-Oriented Predictive Process Monitoring on Positive and Unlabelled Event Logs, ICPM 2022 Workshops

Stevens, A., De Smedt, J., Peepkorn, J. & De Weerd J. (2022) Assessing the Robustness in Predictive Process Monitoring through Adversarial Attacks, ICPM 2022

Vandenabeele, J., Vermaut, G., Peepkorn, J., & De Weerd, J. (2021). Enhancing Stochastic Petri Net-based Remaining Time Prediction using k-Nearest Neighbors., ATAED (Petri Nets 2022), <https://ceur-ws.org/Vol-3167>

Peeperkorn, J., vanden Broucke, S. & De Weerd, J. (2022). Can Deep Neural Networks Learn Process Model Structure? An Assessment Framework and Analysis. In: J. Munoz-Gama, X. Lu (Eds.), Process Mining Workshops, (127-139). Presented at the ICPM, Eindhoven. Cham. ISBN: 978-3-030-98581-3.

Stevens, A., De Smedt, J. & Peepkorn, J. (2022). Quantifying Explainability in Outcome-Oriented Predictive Process Monitoring. In: J. Munoz-Gama, X. Lu (Eds.), Process Mining Workshops, (127-139). Presented at the ICPM, Eindhoven. ISBN: 978-3-030-98580-6.

Peeperkorn, J., vanden Broucke, S. & De Weerd, J. (2021). Supervised Conformance Checking Using Recurrent Neural Network Classifiers. vol. LNBIP 406, (175-187). Presented at the International Workshop on Leveraging Machine Learning in Process Mining, Padua. Cham, Switzerland. ISBN: 978-3-030-72692-8. doi: 10.1007/978-3-030-72693-5\_14

Peeperkorn, J., De Weerd, J. & vanden Broucke, S. (2020). Conformance checking using activity and trace embeddings. In: Business Process Management Forum : BPM Forum 2020, Seville, Spain, September 13–18, 2020, Proceedings, (105-121). Presented at the BPM Forum, Seville, 13 Sep 2020-18 Sep 2020. ISBN: 978-3-030-58637-9. doi: 10.1007/978-3-030-58638-6

## **Posters**

Peeperkorn J., Dupuis R., Lapenta G., Forecasting geomagnetic storms using long short-term memory neural networks, European Space Weather Week (ESWW) 2019, Liege, Belgium

## **Preprints**

Lien Bosmans, Jari Peepkorn, Alexandre Goossens, Giovanni Lugaresi, Johannes De Smedt & Jochen De Weerd, "Dynamic and Scalable Data Preparation for Object-Centric Process Mining", <https://arxiv.org/abs/2410.00596>

Dirk Fahland, Marco Montali, Julian Leber, Wil M.P. van der Aalst, Maarten van Asseldonk, Peter Blank, Lien Bosmans, Marcus Brenscheidt, Claudio di Ciccio, Andrea Delgado, Daniel Clegari, Jari Peepkorn, Eric Verbeek, Lotte Vugs & Moe Thandar Wynn, "Towards a Simple and Extensible Standard for Object-Centric Event Data (OCED) – Core Model, Design Space, and Lessons Learned", <https://arxiv.org/abs/2410.14495>

## **In Submission**

Jari Peepkorn & Simon De Vos, "Achieving Group Fairness through Independence in Predictive Process Monitoring"

Alexander Stevens, Jari Peepkorn, Johannes De Smedt & Jochen De Weerd, "Generating Realistic Adversarial Examples for Business Processes using Variational Autoencoders"

## **Doctoral Booklet**

Jari Peepkorn, "Novel Conformance Checking Methods and Validation Strategies for Deep Learning in Process Mining" (2023)

## TEACHING

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- Teaching the course Business Analytics (6 ECTS) in the Advanced Programme on Artificial Intelligence in Business and Industry (Postgraduate Certificate and Advanced Master), KU Leuven (academic years 2023-2024 & 2024-2025)
- Supervision of multiple master theses in HIR/HIRB/MinfM as a daily supervisor (19) (2019-2023) and as a promotor (3) (2023-2024) on different topics ranging from process mining to NLP.
- Assistant for the course Business Analysis/Business Analyse (2019-2023) and Introduction to Analytics (2022-2023), mainly in designing/correcting assignments
- Multiple guest sessions

## REFERENCES

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- Jochen De Weerd, professor KU Leuven, [jochen.deweerd@kuleuven.be](mailto:jochen.deweerd@kuleuven.be)
- Johannes De Smedt, professor KU Leuven, [johannes.desmedt@kuleuven.be](mailto:johannes.desmedt@kuleuven.be)
- Seppe vanden Broucke, professor Ugent, [seppe.vandenbroucke@ugent.be](mailto:seppe.vandenbroucke@ugent.be)