



Jeroen Ooge

Born in Belgium, 6th November 1994

KU Leuven, Department of Computer Science

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Research interests

As a researcher in human-computer interaction, I study how AI systems can better be tailored to human needs. I mainly focus on explainable AI and visual analytics, studying topics such as transparency, appropriate trust, model understanding, model steering, and uncertainty. Furthermore, I am interested in personalised motivational techniques such as gamification.

Education

- 2019–now **PhD in Engineering Science**, KU Leuven. *Explaining Artificial Intelligence with Tailored Interactive Visualisations*, supervisor Prof. dr. Katrien Verbert.
- 2017–2019 **Master of Science in Applied Informatics** (magna cum laude, specialisation multimedia), KU Leuven. Master's thesis: *Personalising motivational strategies and gamification techniques with recommender systems*, supervisor Prof. dr. Katrien Verbert.
- 2015–2017 **Master of Science in Mathematics** (magna cum laude, specialisation fundamental mathematics), Vrije Universiteit Brussel. Master's thesis: *Expander Graphs and Key Predistribution Schemes*, supervisor Prof. dr. Philippe Cara.
- 2012–2015 Bachelor of Science in Mathematics (cum laude), Vrije Universiteit Brussel.
- 2006–2012 General secondary education, economics–mathematics, Koninklijk Atheneum Asse (Belgium).

Working experience

- 2019–now **Doctoral researcher in explainable AI and visual analytics** at KU Leuven.

Project IMPERIUM: Improving comprehensibility and performance of risk prediction models for decision support in clinical environments

- Designed and developed XAI interfaces in healthcare.
- Collaborated with academic partners in predictive modelling and healthcare.
- Gave talks about the research in international research meetings.

Project BigDataGrapes: Big Data to enable global disruption of the Grapevine-powered industries

- Designed and developed XAI and visual analytics interfaces in agrifood.
- Collaborated with industrial partners in agrifood.
- Gave talks about the research in international research meetings and conferences (IEEE VIS).

Project AIDA: AI-Driven e-Assessment

- Designed and developed XAI interfaces in education for teachers and students.

- Developed prediction models based on learning data to assist teachers and students.
- Collaborated with industrial and academic partners in XAI, learning analytics, and education.
- Gave talks about the research in international research meetings and conferences (IUI).

2019–now **Educational author** at publisher die Keure (Belgium).

- Written scripts and designed visuals for educational videos on secondary school mathematics.
- Reviewed textbooks on secondary school mathematics.

Research publications (first author)

- 2023 **Steering Recommendations and Visualising Its Impact: Effects on Adolescents' Trust in E-Learning Platforms.** Jeroen Ooge, Leen Dereu, and Katrien Verbert. In *IUI '23: 28th International Conference on Intelligent User Interfaces*. To appear.
- 2022 **Visually Explaining Uncertain Price Predictions in Agrifood: A User-Centred Case-Study.** Jeroen Ooge, and Katrien Verbert. In *Agriculture*, 2022. DOI: [10.3390/agriculture12071024](https://doi.org/10.3390/agriculture12071024).
- Explaining Recommendations in E-Learning: Effects on Adolescents' Trust.** Jeroen Ooge*, Shotallo Kato*, and Katrien Verbert. In *IUI '22: 27th International Conference on Intelligent User Interfaces*. DOI: [10.1145/3490099.3511140](https://doi.org/10.1145/3490099.3511140).
- Explaining Artificial Intelligence with Tailored Interactive Visualisations.** Jeroen Ooge, and Katrien Verbert. In *IUI '22 Companion: 27th International Conference on Intelligent User Interfaces*. DOI: [10.1145/3490100.3516481](https://doi.org/10.1145/3490100.3516481).
- Explaining artificial intelligence with visual analytics in healthcare.** Jeroen Ooge, Gregor Stiglic, and Katrien Verbert. In *WIREs Data Mining Knowledge Discovery*, 2021. DOI: [10.1002/widm.1427](https://doi.org/10.1002/widm.1427).
- 2021 **Trust in Prediction Models: a Mixed-Methods Pilot Study on the Impact of Domain Expertise.** Jeroen Ooge, and Katrien Verbert. *2021 IEEE Workshop on TRust and EXpertise in Visual Analytics (TREX)*, 2021. DOI: [10.1109/TREX53765.2021.00007](https://doi.org/10.1109/TREX53765.2021.00007).
- 2020 **Tailoring gamification for adolescents: a validation study of Big Five and Hexad in Dutch.** Jeroen Ooge, Robin De Croon, Katrien Verbert, and Vero Vanden Abeele. In *CHI PLAY '20: Proceedings of the Annual Symposium on Computer-Human Interaction in Play*. DOI: [10.1145/3410404.3414267](https://doi.org/10.1145/3410404.3414267).

Research publications (co-author)

- 2023 **Directive explanations for monitoring the risk of diabetes onset: Introducing directive data-centric explanations and combinations to support what-if explorations.** Aditya Bhattacharya, Jeroen Ooge, Gregor Stiglic, and Katrien Verbert. In *IUI '23: 28th International Conference on Intelligent User Interfaces*. To appear.
- 2022 **Developing Visual-Assisted Decision Support Systems across Diverse Agricultural Use Cases.** Nyi-Nyi Htun, Diego Rojo, Jeroen Ooge, Robin De Croon, Aikaterini Kasimati, and Katrien Verbert. In *Agriculture*, 2022. DOI: [10.3390/agriculture12071027](https://doi.org/10.3390/agriculture12071027).

Teaching experience

2020–now **Supervisor of Master's theses** at KU Leuven in Applied Informatics and Computer Science.

- *Personalising rewards to increase competence.* Joran De Braekeleer, now.

- *Bringing learning analytics to the classroom: Detecting and explaining student outliers.* Anissa Faik, now.
- *Recommending personalised teaching methods with learning analytics: A tool for teachers.* Rémi Vermeersch, now.
- *Using exploration and avatar personalisation to increase the intrinsic motivation for solving maths exercises.* Barbara Ameloot, 2022.
- *Recommending the right maths in digital learning environments: The effect of control over recommended exercises.* Leen Dereu, 2022.
- *Opening the black box: The effect of SHAP and counterfactuals on AI novices' trust in and understanding of black box models.* Jeffrey Quicken, 2022.
- *Illuminating the black box: Explaining machine learning algorithms that detect fake news on Twitter.* Kenan Ekici, 2021.
- *Practicing the Right Math: Enhancing Trust in an E-Learning Platform Using an Explainable Recommender System.* Shotallo Kato, 2021.
- *Winning over math haters: Applying tailored gamification to foster intrinsic motivation.* Mario Verstraeten, 2021.

2019–now **Teaching assistant**, KU Leuven.

- Fundamentals for Informatics (Bachelor)
- Fundamentals Human-Computer Interaction (Master)
- Information Visualisation (Master)

2014–2019 **Private tutor** for mathematics, physics, chemistry, and informatics (primary school, secondary school, and Bachelor). Freelance and for companies: Solutio vzw (2017) and Slaagsleutels (2018–2019).

2015–2017 **Tutor** for mathematics and physics Bachelor students, Vrije Universiteit Brussel.

Committees and academic services

2022–now **Reviewer** for journals and conferences: RecSys, CHI, IEEE VIS, Transactions in Intelligent Systems, AI Reviews, etc.

Academic staff representative in the Department of Computer Science at KU Leuven.

Ombuds person for the Master of Digital Humanities at KU Leuven.

Assessor of Master's theses at KU Leuven in Applied Informatics and Computer Science.

2022 Board member in the HCXAI workshop at CHI.

Awards and honours

2021 Award for best assistant in informatics in 2021–2022, granted by student union Wina.

2019 Shortlist for Klasseprijs, award for the best Master's thesis on education in Flanders.

Other skills

Computer skills: HTML, CSS, Javascript, Drupal, Java, PHP, Matlab, Haskell, Prolog, Python, R, Meteor, React, Docker, Git, D3, LaTeX, Excel, Outlook, PowerPoint, Publisher, Word, etc.

Languages: Dutch (native), English and French (fluent), Spanish and German (basic).