

Manel Slokom

Curriculum Vitae

Profile

Researcher in responsible AI and data-driven systems with a technical background in privacy-preserving machine learning, synthetic data, recommender systems, federated learning, and privacy-enhancing technologies. I obtained my PhD from TU Delft, where my research focused on privacy-preserving techniques, including the development and evaluation of attacks and defences for privacy-sensitive data and systems. I bring three years of experience at Statistics Netherlands (CBS), where I worked in the Methodology team and collaborated across departments on data-driven methodological challenges. I then spent three years as a postdoctoral researcher at CWI and the AI, Media & Democracy Lab, working on responsible AI and recommender systems in collaboration with media organisations such as DPG Media and NEMO Kennislink. I combine technical research with interdisciplinary collaboration and applied research. I have supervised more than thirty BSc and MSc students across universities in the Netherlands and internationally, and I teach courses in AI, data analytics, and research methods.

Education

- 2025–2026 **Postdoctoral Researcher**, *VU – Quantitative Data Analytics*, Amsterdam, Netherlands.
Focus: Intersectional fairness, and in/post-training of recommendations.
- 2023–2026 **Postdoctoral Researcher**, *CWI – Human-Centered Data Analytics*, Amsterdam, Netherlands.
Focus: Diversity in News Recommender Systems, AI Ethics, and Federated learning.
- 2017–2024 **PhD in Computer Science**, *Delft University of Technology*, Netherlands.
Dissertation: *Towards Purpose-Aware Privacy-Preserving Techniques for Predictive Applications*.
- 2014–2015 **MSc in Data Mining & Knowledge Management**, *Polytech Nantes, University of Nantes*, France.
- 2013–2015 **MSc in Business Intelligence**, *ISG Tunis*, Tunisia.
- 2011–2013 **BSc in Information technology applied to management**, *ISG Tunis*, Tunisia.

Experience

- 2026–Present **Lecturer**, *Hotelschool*, the Hague university of applied sciences, Netherlands.
- Teaching Data Analytics and Research to year 1 students.
 - Involved in the Hospitality Research Lab course for year 3 students.
 - Involved in the maker space: the use of AR/VR, 3D printing.

Brouwersgracht 21 – 2512EP – Den Haag, Netherlands.

📞 +31 622 965 113 • ✉ manel.slokom@live.fr

- 2021–2024 **Methodologist**, *Centraal Bureau voor de Statistiek (CBS)*, The Hague, Netherlands.
- Advised on data governance policy and contributed to frameworks for responsible data access in a national statistical context.
 - Developed and validated privacy-preserving analytical methods for sensitive population data under strict confidentiality and legal constraints.
 - Evaluated synthetic data and model-release strategies as secure alternatives to direct data access.
 - Collaborated internationally (Statistics Canada, UNECE) on responsible data governance frameworks.
 - Co-authored the UNECE guidelines on synthetic data for official statistics, and the IEEE White Paper on privacy risk, metrics, and governance in synthetic data
- 2017 **Research Intern**, *LIPN, University of Paris 13*, France.
- Worked on social recommender systems and link prediction algorithms.
 - Gained hands-on experience in graph-based machine learning methods.

Teaching & Supervision

- 2017–Present **Student Supervision**, *VU Amsterdam, TU Delft, Radboud, UvA, NTNU*, Netherlands / International.
- Supervised 20+ BSc and MSc students on privacy-preserving ML, recommender systems, fairness, and synthetic data.
 - Several supervised projects led to peer-reviewed publications at ACM RecSys, ECIR, and PSD.
- 2021–2022 **Teaching Assistant**, *Radboud University*, Netherlands.
- Taught **research methods** at MSc level: planning, problem-solving, and methodological design.
 - Coached students on applying AI and data science in **real-world scenarios**.
- 2018–2019 **Teaching Assistant**, *Amsterdam Institute for Advanced Metropolitan Solutions*, Netherlands.
- Designed and delivered **R programming tutorials** for metropolitan data analysis.
 - Teaching materials publicly available on GitHub.

Technical Skills

- | | |
|------------------|--|
| Programming | Python (Pandas, Scikit-learn, PyTorch), R, SQL, LaTeX |
| Machine Learning | Privacy-preserving ML, Synthetic Data Generation, Federated Learning, NLP, Fairness-aware Systems, LLMs |
| Security & Data | data governance standards (UNECE, IEEE), Differential Privacy, Model Inversion Defence, Statistical Disclosure Control |
| Platforms | Linux, Git, HPC environments, cloud data pipelines |
| Research methods | Empirical evaluation, Human-subject studies, Interdisciplinary applied research |
| Soft Skills | Project supervision, Interdisciplinary collaboration, Research-to-Industry translation |

Invited Talks

- **Visiting Researcher**, CEDAR Group, INRIA Saclay (France). Talk: *How to Diversify Any Personalized Recommender?* November 2024.
- **Speaker and participation in panel discussion**, Workshop on Synthetic Data for Fairness and Privacy. Talk: *Synthetic Data for Responsible AI* November 2024.
- **Speaker**, Brinkhof AI Symposium & Internet Thesis Award. Talk: *Responsible Machine Learning and Recommender Systems* October 2023.
- **Invited Talk**, Norwegian University of Science and Technology (NTNU). Talk: *Personalized Gender Obfuscation for Recommender System Data* 2022.
- **Speaker**, Sim4IR Workshop at SIGIR. Talk: *Towards User-Oriented Privacy for Recommender System Data* July 2021.
- **Guest Lecturer**, Norwegian University of Science and Technology (NTNU). Talk: *Purpose-Aware Privacy-Preserving Data for Recommender Systems* 2020.

Academic Service and Event Organization

- **Co-organizer of SynIRgy**, 1st Workshop on Simulation and Synthetic Data Synergy for Information Retrieval, ECIR 2026.
- Student Volunteer Co-Chair, ACM Conference on Recommender Systems (RecSys), 2021.
- **Co-organizer of SimuRec**, 1st Workshop on Simulation and Synthetic Data for Recommender Systems Research, ACM RecSys 2021.
- Student Volunteer, ACM Conference on Recommender Systems (RecSys), 2018–2020
- Reviewer at ACM TIST, ACM TOIS, ACM RecSys, ECIR, WebConference, UMAP, IPM, reviews for various conference workshops such as BIAS, RMSE, SynIRgy.

Languages

Arabic (advanced), English (advanced), French (advanced), Dutch (B1)

Publications

Data Governance and Responsible AI

This body of work explores privacy-preserving machine learning, synthetic data generation, and statistical disclosure control, particularly in the context of official statistics. It includes both technical advances (e.g., defense against model inversion attacks, data synthesis techniques) and applied tools (e.g., the award-winning COACH system) that integrate human-in-the-loop privacy assurance workflows.

- **Manel Slokom**, Malek Slokom, & Thierno Kante (2026). *LLM-as-a-Discriminator: When Synthetic Tables Still Look Real*. arXiv preprint arXiv:2606.09865.
- Alexander Boudewijn, Maurice Coyle, Alexandra Ebert, Abdullah Elbi, Mark Elliot, Matteo Gioni, Faris Haddad, Shannon Kroes, Aldo Maurizio Lamberti, Simone Mangiante, Rudolf Mayer, Grady Nye, **Manel Slokom**. *Toward Practical Anonymity: A White Paper on privacy risk, metrics, and governance in synthetic data*. IEEE Explore. 2025.
- **Manel Slokom**, Jel Vankan, Peter-Paul de Wolf. *From COACH to COACH+: Automating Output Checking with Human-in-the-Loop*. Statistical Journal of the IAOS, 2024. **Winner – IAOS Prize for Young Statisticians**.
- **Manel Slokom**, Jel Vankan, Peter-Paul de Wolf, Martha Larson. *COACH: Computer-Assisted output Checking with Human-in-the-Loop*. UNECE Expert Meeting on Statistical Data Confi-

Brouwersgracht 21 – 2512EP – Den Haag, Netherlands.

☎ +31 622 965 113 • ✉ manel.slokom@live.fr

3/5

dentiality, 2023.

- **Manel Slokom**, Peter-Paul de Wolf, Martha Larson. *Exploring Privacy-Preserving Techniques on Synthetic Data as a Defense Against Model Inversion Attacks*. Information Security Conference, Springer, 2023.
- United Nations. Synthetic Data for Official Statistics - A starter guide. United Nations Economic Commission for Europe (UNECE). 2022 <https://unece.org/sites/default/files/2022-11/ECECESSTAT20226.pdf>.
- Giuseppe Garofalo, **Manel Slokom**, et al. *Machine Learning Meets Data Modification: The Potential of Pre-processing for Privacy Enhancement*. In *Security and Artificial Intelligence*, Springer, 2022.
- **Manel Slokom**, Peter-Paul de Wolf, Martha Larson. *When Machine Learning Models Leak: An Exploration of Synthetic Training Data*. PSD, Springer, 2022.
- **Manel Slokom**, Shruti Agrawal, Nynke C. Krol, Peter-Paul de Wolf. *Relational or Single: A Comparative Analysis of Data Synthesis Approaches for Privacy and Utility*. PSD, Springer, 2024.
- Mohamed Aghaddar, Liu N. Su, **Manel Slokom**, et al. *A Case Study Exploring Data Synthesis Strategies on Tabular vs. Aggregated Data Sources*. PSD, Springer, 2024.
- Martha Larson, Jaeyoung Choi, **Manel Slokom**, et al. *Privacy and Audiovisual Content: Protecting Users as Big Multimedia Data Grows Bigger*. In *Big Data Analytics for Multimedia Search*, Springer, 2019.

Responsible Recommender Systems & Personalization

This line of work focuses on enhancing recommendation diversity and personalization using state-of-the-art methods such as federated learning, large language models (LLMs), and contrastive learning. The research spans application domains from entertainment platforms like Netflix to news and sequential recommenders, with an emphasis on fairness, user modeling, and post-processing strategies.

- **Manel Slokom** & Alejandro Bellogin. (2026, June). *Beyond Centralization: User-Controlled Federated Recommendations in Practice*. In Proceedings of the 34th ACM Conference on User Modeling, Adaptation and Personalization (pp. 462-465).
- Sven Lankester (MS), **Manel Slokom**, et al. *FedFlex: Federated Learning for Diverse Netflix Recommendations*. The 2nd International Conference on Federated Learning and Intelligent Computing Systems (FLICS), 2026.
- Bo Chen (MS), **Manel Slokom**. *LLMDiRec: LLM-Enhanced Intent Diffusion for Sequential Recommendation*. Human Centered Intelligent Systems, KES, Springer, 2026. **Best paper award**
- Zijie Tang (MS), **Manel Slokom**. *News, With a Twist: Using Contrastive Learning to Improve User Embeddings for Diverse News Recommendations*. INRA at ACM RecSys, 2025.
- **Manel Slokom**, Laura Hollink. *Personalized Post-processing: How Much Does Your Data Shape Recommendation Diversity?* Under review, 2026.
- **Manel Slokom**, Savvina Danil, Laura Hollink. *How to Diversify Any Personalized Recommender?* ECIR 2025.
- **Manel Slokom**, Alan Hanjalic, Martha Larson. *Towards User-Oriented Privacy for Recommender System Data: A Personalization-based Approach to Gender Obfuscation for User Profiles*. Information Processing & Management, 2021.
- **Manel Slokom**, Martha Larson. *Doing Data Right: Lessons from Conventional Data to Improve Synthetic Data for Recommender Systems*. SimuRec Workshop at RecSys, 2021.
- **Manel Slokom**, Martha Larson, Alan Hanjalic. *Partially Synthetic Data for Recommender*

Brouwersgracht 21 – 2512EP – Den Haag, Netherlands.

☎ +31 622 965 113 • ✉ manel.slokom@live.fr

4/5

Systems. PSD, 2020.

- **Manel Slokom**, Martha Larson, Alan Hanjalic. *Data Masking for Recommender Systems: Prediction Performance and Rating Hiding*. Late-breaking Results, RecSys, 2019.
- Christopher Strucks, **Manel Slokom**, Martha Larson. *BlurM(or)e: Revisiting Gender Obfuscation in the User-Item Matrix*. RMSE Workshop at RecSys, 2019.
- Martha Larson, **Manel Slokom**. *Up Close, but not Too Personal: Hypotargeting for Recommender Systems*. ImpactRS Workshop at RecSys, 2019.
- **Manel Slokom**. *Comparing Recommender Systems Using Synthetic Data*. ACM RecSys, 2018.