

Clara Rus

Curriculum Vitae

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Education

- Nov 2022 – **PhD in Fairness in Information Retrieval, University of Amsterdam**
Present *Research interests:* Trustworthy and responsible AI with a focus on intersectional fairness-aware learning to rank for algorithmic hiring, part of an EU interdisciplinary project.
Advisors: Maarten de Rijke (M.deRijke@uva.nl), Andrew Yates (a.c.yates@uva.nl).
- 2020 – 2022 **MSc in Data Science, Radboud University**
Thesis: Debiasing word embeddings with respect to gender for the recruitment industry.
Advisors: Harrie Oosterhuis, Gido H. Schoenmacker.
- 2016 – 2020 **BSc in Computer Engineering, Politehnica University of Timisoara**
Thesis: Android Application - Chatbot for Travelling.
Advisor: Marius Marcu.

Experience

- Mar 2022 – **Data Scientist Intern, DPG Media Netherlands**
Sep 2022 Researched debiasing techniques of word embeddings for the recruitment industry.
- Sep 2021 – **Machine Learning Researcher Intern, ASM Pacific Technology Netherlands**
Jan 2022 Researched machine learning techniques for depth estimation from focal stacks for the microdevices industry.
- Jan 2020 – **Machine Learning Researcher Intern, Continental Automotive Romania**
Sep 2021 Researched machine learning techniques for object detection and depth estimation from stereo and monocular images in the context of autonomous driving.
- Oct 2018 – **Software Developer Intern, Hella Romania**
Jan 2020 Developed internal tools for processing car sensor data using C# and Java programming languages for the automotive industry.
- Jul 2018 – **Technical Support Engineer Intern, Microsoft Romania**
Oct 2018 Developed a mobile application for a second-hand shop using Microsoft Power Apps.

Skills & Languages

- Python, PyTorch, Ranking, Recommendation, Fairness, Natural Language Processing (NLP), Computer Vision
English (C1); German (B1)

Publications

- Fabris, Alessandro, Clara Rus, Jorge Saldivar, Anna Gatzoura, Asia J Biega, and Carlos Castillo (2026). "Does fair ranking lead to fair recruitment outcomes? A study of interventions, interfaces, and interactions". In: *Information Processing & Management* 63.3, p. 104506.
- Rus, Clara, Masoud Mansouri, Andrew Yates, and Maarten de Rijke (2026). "Joint Modeling of Candidate and Recruiter Preferences for Fair Two-Sided Job Matching". In: *Proceedings of the European Conference on Information Retrieval (ECIR)*.
- Rus, Clara, Andrew Yates, and Maarten de Rijke (2026). "Judiciously Reducing Sub-group Comparisons for Learning Intersectional Fair Representations". In: *Proceedings of the European Conference on Information Retrieval (ECIR)*.
- Honig, Sander, Elyanne Oey, Lisanne Wallaard, Sharanda Suttorp, and Clara Rus (2025). "A Reproducibility Study of "User-item Fairness Tradeoffs in Recommendations"". In: *Transactions on Machine Learning Research*.
- Rus, Clara, Andrew Yates, Frederik Zuiderveen Borgesius, Natalia Baranowska, Salvatore Ruggieri, Davide Rotelli, Andrea Mastropietro, and Lorena Gonzalez (2025). *Software Development Guide*. Technical Report. Project FINDHR – Fairness and Intersectional Non-Discrimination in Human Recommendation.
- Xu, Chen, Zhirui Deng, Clara Rus, Xiaopeng Ye, Yuanna Liu, Jun Xu, Zhicheng Dou, Ji-Rong Wen, and Maarten de Rijke (2025). "FairDiverse: A Comprehensive Toolkit for Fairness-and Diversity-aware Information Retrieval". In: *Proceedings of the 48th International ACM SIGIR Conference on Research and Development in Information Retrieval*, pp. 3540–3550.
- Xu, Chen, Clara Rus, Yuanna Liu, Marleen de Jonge, Jun Xu, and Maarten de Rijke (2025). "Fairness in information retrieval from an economic perspective". In: *Proceedings of the 48th International ACM SIGIR Conference on Research and Development in Information Retrieval*, pp. 4126–4129.
- Rus, Clara, Gabrielle Poerwawinata, Andrew Yates, and Maarten de Rijke (2024). "AnnoRank: A Comprehensive Web-Based Framework for Collecting Annotations and Assessing Rankings". In: *Proceedings of the 33rd ACM International Conference on Information and Knowledge Management*, pp. 5400–5404.
- Rus, Clara, Andrew Yates, and Maarten de Rijke (2024). "A Study of Pre-processing Fairness Intervention Methods for Ranking People". In: *European Conference on Information Retrieval*. Springer, pp. 336–350.
- Rus, Clara, Maarten de Rijke, and Andrew Yates (2023). "Counterfactual Representations for Intersectional Fair Ranking in Recruitment." In: *HR@ RecSys*.
- Rus, Clara, Jeffrey Luppes, Harrie Oosterhuis, and Gido H Schoenmaker (2022). "Closing the Gender Wage Gap: Adversarial Fairness in Job Recommendation". In: *HR@ RecSys*.

Teaching and Supervision

- 2025 – 2026 **Supervising MSc in Artificial Intelligence**, *University of Amsterdam*
Thesis Topic: Interpretable-by-Design Text Understanding with Iteratively Generated Concept Bottleneck
- 2025 **Recommender Systems**, *MSc in Artificial Intelligence*, University of Amsterdam
Invited guest lecture on fairness in recommender systems.
- 2025 **Supervising BSc in Artificial Intelligence**, University of Amsterdam
Thesis Topics: (i) Evaluating debiasing techniques for a fair ranking of intersectional groups in education; (ii) Counterfactual Fair Ranking under Covariate Shift: An analysis of the robustness of debiasing techniques for fair ranking systems in a hiring context.
- 2025 **Lecture on Gender and AI**, *Annie Romein-Verschoor*, Invited speaker
- 2025 **Fairness, Accountability, Confidentiality and Transparency in AI**, *MSc in Artificial Intelligence*, University of Amsterdam
Teaching Assistant supervising three groups of students in conducting reproducibility projects which led to submissions at the TMLR - MLRC.
- 2024 – 2025 **30h Course on Fairness in AI Recruitment**, *Fairness and Intersectional Non-Discrimination in Human Recommendation (FINDHR) European Project*
Lecture on Fairness in Rankings.
- 2023 – 2025 **Information Retrieval 1**, *MSc in Artificial Intelligence*, University of Amsterdam
Teaching Assistant. Designing the Lecture on Fairness in Rankings.
- 2023 – 2024 **Supervising MSc in Artificial Intelligence**, *University of Amsterdam*
Thesis Topic: Ensuring Sustainable Futures: How Foundation Models Transform ESG Auditing

Resources

AnnoRank, [LINK](#), a web-based user interface (UI) framework for assessing rankings, enabling user studies and annotation tasks.

Fairness Benchmark, [LINK](#), a toolkit for reproducing and developing fairness- and diversity-aware Information Retrieval (IR) tasks.

Fairness API, [LINK](#), a modular python software package designed to support fair, transparent, and explainable human resources (HR) decision-making.

Community Service

Organizer: The 15th European Summer School on Information Retrieval

Reviewing: SIGIR'24, ECIR'25

PC Member: ICTIR'23, EWAF'24, Recsys in HR'24/25, AIMMES'24/25, SIGIR'25, WSDM'26, ECIR'26

Additional Education

- 2024 **University of Amsterdam**, *The 15th European Summer School on Information Retrieval (ESSIR)*

2023 **University of Ljubljana**, *The 1st European Summer School on Artificial Intelligence (ESSAI)*

Awards

- 2025 **NTCIR-18**, *Japan*, Tokyo, Best poster presentation at the FairWeb-2 NTCIR-18.
- 2020 **Microsoft AI for Girls**, *Timisoara*, Romania, Collaborated on solving the task of recognizing text information from photos (1st place).
- 2019 **Startup Weekend**, *Timisoara*, Romania, Collaborated on designing a business plan and developing an MVP for a dog matching app (3rd place).

Extracurricular Activities

- 2024 **NTCIR-18 FairWeb-2 Task**, [LINK](#), Collaborated on solving the task of improving the fairness of retrieved web pages.
- 2018 – 2019 **UPT Race Team**, *Member*, Timisoara, Romania, Member in the Arduino Team of a student organization aiming to build a race car in order to participate in Formula Student's competitions.
- 2016 – 2018 **AC Club**, *Member*, Timisoara, Romania, Member of student organization. Participating in organizing computer science and social events for students.
- 2016 **Interact Club**, *Board Member*, Timisoara, Romania, Board member of charitable youth organization.