Célina Treuillier

Ph.D. in Computer Science

Fribourg - SWITZERLAND

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Education

Post-doc in Computer Science

Fribourg, SWITZERLAND

University of Fribourg - Human-IST institute

March 2025 - Now

- Artificial Intelligence, Machine Learning
- User Modeling
- Data visualization
- Human-computer interaction
- Generative artificial intelligence

Ph.D. in Computer Science

Nancy, FRANCE

Université de Lorraine - LORIA

October 2021 - October 2024

- Artificial Intelligence, Machine Learning
- User Modeling
- News Recommender Systems
- Filter Bubbles
- Trustworthy AI

Master Degree in Cognitive Science with Honors

Nancy, FRANCE

Université de Lorraine

September 2019 - September 2021

- Artificial Intelligence
- Human-Computer Interaction
- Psychology
- Behavioral Analysis

Master Degree in Neurosciences *(first year)*

Strasbourg, FRANCE

Université de Strasbourg

September 2018 - June 2019

- Neurobiology
- Cognitive Neuroscience
- Neuroimaging

Bachelor Degree in Biomedical Engineering with Honors

Nancy, FRANCE

Université de Lorraine

September 2015 - June 2018

- Statistics
- Cellular and Molecular Biology
- Medical Electronics

Research Experience

Senior Researcher

Fribourg, SWITZERLAND

Institut Human-IST (Human Centered Interaction Science and Technology)

March 2025 - Now

- Research in the field of human-computer interaction and artificial intelligence

  Research interests:
  - Human-AI collaboration
  - Generative artificial intelligence
  - Data visualization

  Research project activities:
  - Collaboration with research and industrial partners
  - Research project management
  - Funding applications

Research Assistant - Full-time

Nancy, FRANCE

LORIA - Lorraine Research Laboratory in Computer Science and its Applications

September 2021 - Now

- **Subject:** Design of a news recommender system to open opinion bubbles.
  Part of a ANR National Project (2021-2024) - *BOOM (Modeling and Opening Opinion Bubbles)*
  Research interests:
  - Polarization behaviors modeling
  - Artificial Intelligence
  - News Recommender Systems
  - Filter Bubbles
  - Diversity, Fairness
  - Trustworthy Artificial Intelligence
  Research project activities:
  - Collaboration with researchers in political science and natural language processing
  - Interaction with the industrial partner
  - Participation in the development of an online news aggregator (leader on the recommendation aspect)

Visiting Researcher

Trondheim, NORWAY

NTNU - Norwegian University of Science and Technology

August 2023 - December 2023

- **Subject:** Scientific collaboration in connection with thesis work.
  Research interests:
  - News recommendation
  - Ethical artificial intelligence

Research Assistant - Part-time

Nancy, FRANCE

LORIA - Lorraine Research Laboratory in Computer Science and its Applications

September 2020 - September 2021

- **Subject:** Using learning analytics to evaluate learning systems and improve their explainability.
  Research interests:
  - Trustworthy learning analytics
  - Explainability
  - Machine learning and artificial intelligence

Teaching Experience

Data visualization

Université de Lorraine

TELECOM engineering school

2nd Semester, 2023-2024

- Lecturer - graduate course (18h)

Web complement

Université de Lorraine

Charlemagne University Institute of Technology

2nd Semester, 2022-2023

- Teaching assistant - undergraduate course (36h)

Web technologies

Université de Lorraine

Institute for Digital Science, Management and Cognition

1st Semester, 2022-2023

- Teaching assistant - undergraduate course (14h)

Artificial intelligence

Université de Lorraine

Institute for Digital Science, Management and Cognition

2nd Semester, 2021-2022

- Teaching assistant - undergraduate course (20h)

Supervision

- Supervisor for a monitored project carried out by graduate students (Academic year 2023 - 2024) - *Evaluation of the impact of news recommender systems on users behaviors.*
- Supervisor for a graduate Co-op student (Academic year 2022 - 2023) - *Online news consumption monitoring tools and methods.*
- Supervisor for a monitored project carried out by graduate students (Academic year 2022 - 2023 - *Polarization and controversy on Twitter.*
- Supervisor for an undergraduate intern (April and May 2023) - *State of the art and implementation of baseline recommender systems.*
- Supervisor for a graduate Co-op student (Academic year 2021 - 2022) - *Assessment of representation bias on a dataset in an educational context*

Skills

Programming languages	Python - HTML - CSS - JavaScript
Libraries	Numpy - Pandas - Scikit-Learn - Matplotlib - Seaborn - Plotly
Digital Tools	R - Microsoft Office - LimeSurvey
Languages	Native French Speaker - Fluent in English (TOEIC 940/990)

Miscellaneous Experiences

Peer-review activities:

- ACM Transactions on Recommender Systems, Special Issue on "Recommender Systems for Good" (2025)
- INRA'24 workshop, as part of the RecSys conference
- User Modeling and User-Adapted Interaction (UMUAI), Special Issue on "News personalization and Analytics" (2024)

Scientific events organization:

- Co-organizer of the 13th edition of the News Recommendation and Analytics Workshop *(RecSys'25)*
- Co-organizer of the 12th edition of the News Recommendation and Analytics Workshop *(RecSys'24)*

Oral presentations and scientific mediation:

- Speaker at an "epic epoch" event organized by Strasbourg University's Jardin des Sciences, entitled "Algorithmes, contenus ciblés...y êtes-vous sensibles?" (April 2025)
- Speaker at an EDDY (European Digital DemocracY network) meeting on information bubbles (February 2025)
- Regional finalist in the "My thesis in 180 seconds" competition with 3rd prize from the jury. (March 2023)
- Participation at the Cognitive Science forum organized by the Institute for Digital Science, Management and Cognition. Talk about the role of recommender systems in political polarization (November 2021 and 2022).

Publications

User Modeling and News Recommender Systems (Ph.D. thesis)

- **C. Treuillier**, S. Castagnos, Ö.Özgöbek & A.Brun (2024) Beyond Trade-offs: Unveiling Fairness-Constrained Diversity in News Recommender Systems, *Proceedings of the 32nd ACM Conference on User Modeling, Adaptation and Personalization (UMAP'24)*
- **C. Treuillier**, S. Castagnos, C.Lagier & A.Brun (2024) Gaining a better understanding of online polarization by approaching it as a dynamic process, *Scientific Reports, Nature publishing group*
- **C. Treuillier**, S. Castagnos & A. Brun (2024) All Polarized but Still Different: a Multi-factorial Metric to Discriminate between Polarization Behaviors on Social Media, *39th ACM/SIGAPP Symposium On Applied Computing (SAC'24)*
- **C. Treuillier**, S. Castagnos & A. Brun (2023) How a Multi-factorial Analysis of Polarization Paves the Way for Innovative Recommendation Strategies, *NorwAI INNOVATE conference*
- **C. Treuillier**, S. Castagnos & A. Brun (2023) A Multi-Factorial Analysis of Polarization on Social Media, *Adjunct Proceedings of the 31st ACM Conference on User Modeling, Adaptation and Personalization (UMAP'23)*
- **C. Treuillier**, E.Dufraisse, S. Castagnos & A.Brun (2022) Being Diverse is Not Enough: Rethinking Diversity Evaluation to Meet Challenges of News Recommender Systems, *Adjunct Proceedings of the 30th ACM Conference on User Modeling, Adaptation and Personalization (UMAP'22)*
- E.Dufraisse, **C. Treuillier**, S. Castagnos & A.Brun (2022) Don't Burst Blindly: For a Better Use of Natural Language Processing to Fight Opinion Bubbles in News Recommendations, *Proceedings of the LREC 2022 workshop on Natural Language Processing for Political Sciences (LREC'22)*

Learning Analytics (Master thesis)

- I. El Alaoui, **C.Treuillier**, A. Boyer (2023) Fair Design of Learners Descriptive Cards, *Proceedings of the 4th International Workshop on Human-Centred Learning Analytics (HCLA'23)*
- I. Redjem, **C.Treuillier**, A. Boyer (2023) Designing Transparent Learning Analytics Dashboards, *Proceedings of the 4th International Workshop on Human-Centred Learning Analytics (HCLA'23)*
- A. Ben Soussia, **C. Treuillier**, A. Roussanaly, & A. Boyer (2022) Learning profiles to assess educational prediction systems, *Proceedings of the International Conference on Artificial Intelligence in Education (AIED'22)*
- **C. Treuillier** & A. Boyer (2022) A New Way to Characterize Learning Datasets, *Proceedings of the 14th International Conference on Computer Supported Education (CSEDU'22)*
- **C. Treuillier** & A. Boyer (2021) Identification of class-representative learner personas, *Proceedings of the LA4SLE 2021 workshop on Learning Analytics for Smart Learning Environments (LA4SLE'21)*