Célina Treuillier

PH.D. IN COMPUTER SCIENCE

Nancy - FRANCE

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Education

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

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

- Reviewer for the UMUAI Special Issue on "News personalization and Analytics"
- Co-organizer of the 12th edition of the News Recommendation and Analytics Workshop *(RecSys'24)*
- 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).
- Regional finalist in the "My thesis in 180 seconds" competition with 3rd prize from the jury. (March 2023)

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)*

Paper under review

- **C. Treuillier** & A. Boyer (2023) From Learning Traces to Personas: A Trustworthy Approach to Characterize Learning Behaviors, *SN Computer Science*

Referees

Armelle Brun Université de Lorraine, LORIA - Professor - *armelle.brun@loria.fr*
Sylvain Castagnos Université de Lorraine, LORIA - Associate Professor - *sylvain.castagnos@loria.fr*
Anne Boyer Université de Lorraine, LORIA - Professor - *anne.boyer@loria.fr*
Özlem Özgöbek Department of Computer Science, NTNU - Associate Professor - *özlem.özgöbek@ntnu.no*