



ETIENNE Elodie

Date of birth: 20/09/1996

<https://elodieetienne96.github.io/index.html>

Fields

Data Science & Artificial Intelligence

Machine learning, statistics, and multimodal data analysis.

Mathematics & Statistics

Metrics and Analysis based on user-centered, explicability, and actionable insights.

Immersive technologies & Human-machine interaction

Virtual Reality, agents, perception.

Languages

French - Mother Tongue

English - Advanced

Dutch - Beginner

Education

HEC Liège (University of Liège) - Ph.D. in Management Science

October 2019 - May 2025, Belgium

Doctoral research focused on the development of an analytical and pedagogical framework for public speaking training. The project combined theoretical modelling of persuasive competencies, design of immersive training environments, implementation within university curricula, and multimodal and empirical evaluation of communicative performance and skill development.

University of Liège - Master in Mathematics Sciences with a teaching specialization

- *Magna cum laude*

September 2017 - June 2019, Belgium

University of Southampton - Master in Actuarial Science - Summa Cum laude

September 2017 - January 2018, United Kingdom

Master in Actuarial Sciences part of an exchange program (ERASMUS stay)

University of Liège - Bachelor in Mathematics Sciences - *Cum laude*

September 2014 - June 2017, Belgium

Collège Saint-Roch Ferrières - CESS - *Summa Cum laude*

September 2008 - June 2014, Belgium

Programming skills

Python - Advanced
R - Advanced
SAS - Advanced (certified)

C++ - Beginner

Experience Abroad

Paul Sabatier University (France) - Research Stay

Août 2026 - September 2026

1-month research stay to collaborate with Prof. Jean-Michel Loubes and his team (Artificial Intelligence & Statistics) in the Mathematical Institute of Toulouse (IMT).

INRIA Paris (France) - Postdoctoral researcher

October 2025 -

Postdoctoral researcher (PEPR eSEMBLE funding) under Prof. Chloé Clavel and Magalie Ochs on mitigation bias in hybrid group interactions.

Aix-Marseille University (France) - Research Stay

July 2024 - February 2025

7-month research stay to collaborate with Prof. Magalie Ochs and her team (natural language processing and computational linguistics) in the LIS Lab (Computer Science & Systems)

Manchester Metropolitan University (United Kingdom) - Research Stay

May 2023

1-month research stay to collaborate with Prof. Timothy Jung and his team in the OTEHM (Business & Law).

University of Southampton (United Kingdom) - ERASMUS Exchange program

6-month exchange program from September 2017 to February 2018.

Teaching Experience

Ecole Polytechnique, Institut Polytechnique de Paris - Tutorial Leader

January 2026 - March 2026, France

2025-2026: *Socio-emotional Embodied Conversational Agents* (CSC_54442_EP: 2 ECTS, 12h Th, 12h Pr, 17 master students enrolled)

HEC Liège, University of Liège - Substitute Professor

September 2022 - September 2025, Belgium

- 2024-2025: Statistique (hd) (STAT0068: 5 ECTS, 30h Th, 6h Pr, 52 night-classes students enrolled)
- 2023-2024: Statistique (hd) (STAT0068: 5 ECTS, 30h Th, 6h Pr, 71 night-classes students enrolled)
- 2022-2023:
 - Marketing Analytics (INFO2054: 5 ECTS, 30h Th, 60 master students enrolled)
 - SAS Software Certified Young Professionals (GPRO2-SCYP: 14h Th, 10 master students enrolled)

HEC Liège, University of Liège - Teaching Assistant

September 2019 - September 2025, Belgium

- 2024-2025: *Mathématiques pour les sciences économiques et de gestion* (MATH0057: 30h Pr, 288 second-year bachelor students)
- 2023-2024: *Mathématiques pour les sciences économiques et de gestion* (MATH0057: 30h Pr, 281 second-year bachelor students)

- 2022-2023:
 - *Mathématiques pour les sciences économiques et de gestion* (MATH0057: 30h Pr, 292 second-year bachelor students)
 - *Statistique descriptive et notions de probabilités* (STAT0003: 5 ECTS, 16h Pr, 100 first-bachelor students enrolled)
 - *Digital Business Capstone Project* (GEST7064: 5 ECTS, 16h Pr, 10 master students enrolled)
- 2021-2022:
 - *Mathématiques pour les sciences économiques et de gestion* (MATH0057: 30h Pr, 361 second-year bachelor students)
 - *Statistique* (STAT0066: 5 ECTS, 15h Pr, 202 master students enrolled)
 - *Statistique (hd)* (STAT0068: 5 ECTS, 6h Pr, 44 night-classes students enrolled)
- 2020-2021:
 - *Mathématiques pour les sciences économiques et de gestion* (MATH0057: 30h Pr, 361 second-year bachelor students)
 - *Statistique* (STAT0066: 5 ECTS, 15h Pr, 202 master students enrolled)
 - *Statistique (hd)* (STAT0068: 5 ECTS, 6h Pr, 44 night-classes students enrolled)
- 2019-2020:
 - *Mathématiques pour les sciences économiques et de gestion* (MATH0057: 5 ECTS, 30h Pr, 299 second-year bachelor students)
 - *Mathématiques pour les ingénieurs de gestion* (MATH0059: 5 ECTS, 20h Pr, 98 first-year bachelor students)

Athénée royal d'Herstal - Mathematics teacher

August 2019, Belgium

Athénée royal de Chênée - Mathematics teacher

September 2018, Belgium

HEC Liège, University of Liège - Student instructor

October 2016 - September 2019, Belgium

Mathematics remediation for second bachelor students

**Institutional
Responsibility**

HEC Liège, University of Liège - Representative of the Scientific Staff at the HEC Research Board

September 2021 - September 2025, Belgium

PRISME

University of Liège - PhD Representative at the University Level

September 2021 - September 2025, Belgium

PhD Network

Awards

Best Paper Award in Immersive Technologies - 2025

Awarded by the AIRSI Scientific Committee for the most innovative and impactful scientific contribution in immersive technologies.

Best Participant in the Metaverse - 2025

Awarded by the AIRSI Organizing Committee for the most outstanding engagement during the AIRSI2025 conference.

Rising Star - 2025

Awarded by HEC Liège for exceptional early-career research achievements and demonstrated academic potential.

Best Participant in the Metaverse - 2022

Awarded by the AIRSI Organizing Committee for the most outstanding engagement during the AIRSI2022 conference.

Mini-Hackathon Ethias Winners - 2021

Awarded by the Royal Statistical Society of Belgium (RSSB) to the team who created the most effective solution during the Ethias mini-hackathon (6 hours) during the RSSB Annual Meeting.

Hackathon WeCargo Winners - 2019

Awarded by Liège Airport to the team with the most feasible and innovative solution in the WeCargo logistics hackathon (24 hours).

Prix d'Excellence - 2014

Awarded by Collège Saint-Roch Ferrières for outstanding academic excellence.

Research Fundings

PEPR eSEMBLE - 2026 (Grant amount: 2.000 €)

Writing of a project proposal for my one-month research stay in Toulouse (Université Paul Sabatier, Institut de Mathématiques) under Prof. Jean-Michel Loubes' supervision.

Interreg Grande Région - 2025

Contribution to the project called *4VIR Health* preparation (VR training for nurses in communication skills).

PEPR eSEMBLE - 2025 (Grant amount: 168.960 €)

Writing of a 2-year postdoctoral project called *TRUST (Transparent and Responsible Unbiased Social Teams)* under Prof. Chloé Clavel and Magalie Ochs' supervision.

University of Liège - 2024 (Grant amount: 17.450 €)

Writing of a project proposal for my six-month research stay in Marseille (University of Aix-Marseille, LIS Lab).

CDR-SH University of Liège - 2022 (Grant amount: 16.150 €)

Writing of the project proposal called *EVE*, coordinated and held by Prof. Michaël Schyns.

Interreg EMR - 2021

Contribution to the project called *Digital Twin Academy* preparation and scientific input to the proposal.

CDR-SH University of Liège - 2020 (Grant amount: 23.500 €)

Contribution to the project proposal called *ADAM*, written and held by Prof. Michaël Schyns.

Scientific production

Theses

Etienne, E. (2025). *Virtual reality and analytics to enhance communication skills: A multidisciplinary approach* (Doctoral dissertation, University of Liège).

Etienne, E. (2019). *Elementary statistical methods of cryptography*. (Master dissertation, University of Liège).

Journal venue

Bettahi L, Remacle A, Schyns M, Etienne É, Etienne A-M and Leclercq A-L (2026) Validating virtual reality for public speaking research and intervention: comparing anxiety, voice, and fluency responses to real and virtual audiences. *Front. Virtual Real.* 7:1755571. doi: 10.3389/frvir.2026.1755571

Etienne, E., Leclercq, A.-L., Remacle, A., Dessart, L., & Schyns, M. (2023). Perception of avatars' nonverbal behaviors in virtual reality. *Psychology & Marketing*, 40(11), 2464–2481. <https://doi.org/10.1002/mar.21871>

Proceedings in double blind peer-reviewed venues:

Etienne, E., Cho, J., Jung, T. & Schyns, M. (2026). A Virtual Reality Approach to Public Speaking Training in Higher Education. In *IEEE Frontiers in Education Conference (FIE)*, oct. 2026, Paphos, Chypre.

Elodie Etienne, Magalie Ochs, Jean-Michel Loubes, Chloé Clavel. A Methodology to Compare Real and LLM-Simulated Multimodal Interactions: The Case of Gender Bias. In *Proceedings of the 28th International Conference on Multimodal Interaction (ICMI'26)*. Association for Computing Machinery. <https://doi.org/10.1145/3776574.3831157>

Saufnay, S., Etienne, E., Vanmechelen, T., & Schyns, M. (2026). Speech Emotion Recognition for Public Speaking Training in Virtual Reality. In *IEEE International Conference on Artificial Intelligence and eXtended and Virtual Reality* (pp. 168-172). IEEE Computer Society.

Etienne, E., Remacle, A., Leclercq, A.-L., & Schyns, M. (2025). EVE: Emotional Validated Expressions, an acted audiovisual corpus. In *Proceedings of the 25th ACM International Conference on Intelligent Virtual Agents (IVA'25)* (Article 42, pp. 1–4). Association for Computing Machinery. <https://doi.org/10.1145/3717511.3749303>

Ristorcelli, M., Etienne, E., Schyns, M., Casanova, R., & Ochs, M. (2025). Evaluating multimodal behavioral features for public speaking assessment in virtual reality. In *Proceedings of the 25th ACM International Conference on Intelligent Virtual Agents (IVA'25)* (Article 40, pp. 1–4). Association for Computing Machinery. <https://doi.org/10.1145/3717511.3749301>

Etienne, E., Ristorcelli, M., Saufnay, S., Quilez, A., Casanova, R., Schyns, M., & Ochs, M. (2024, September). A systematic review on the socio-affective perception of IVAs' multi-modal behaviour. In *Proceedings of the 24th ACM International Conference on Intelligent Virtual Agents (IVA'24)* (pp. 1–10). <https://doi.org/10.1145/3652988.3673943>

Saufnay, S., Etienne, E. and Schyns, M. (2024). Improvement of Public Speaking Skills Using Virtual Reality: Development of a Training System, In *Proceedings of the 12th International Conference on Affective Computing and Intelligent Interaction Workshops and Demos (ACIIW)* (pp. 122-124). <https://doi.org/10.1109/ACIIW63320.2024.00025>

Vachaudéz, A., Koubi, C., Cornelis, G., & Etienne, E. (2021). Comment les utilisateurs d'assistants vocaux maintiennent-ils leur utilisation de la technologie dans le temps ? In *Actes du 20ème Colloque sur le Marketing Digital*. <https://www.colloquemarketingdigital.com/copie-de-actes-2021>

Periodical bulletin

Menjot, P., Remacle, A., Schyns, M., Etienne, E., & Leclercq, A. L. (2021). Une audience virtuelle pour l'entraînement de la fluence de parole lors d'une prise de parole en public: Etude pilote. *Cahiers de l'ASELF*, 18(2).

Submitted papers

Etienne, E., Ochs, M., & Clavel, C. (2026). A Behaviour Graph-Based Method for Evaluating Gender Bias Amplification in LLM-Augmented Multimodal Interaction Data (Manuscript submitted in 2026 to the 41st Annual AAAI Conference on Artificial Intelligence)

Cho, J., Etienne, E., Schyns, M., Jung, T., & tom Dieck, M. (2026). Virtual reality learning experiences in higher education: an affordances and gratifications perspective. (Manuscript submitted in 2026 for publication in *Information Technology & People*).

Conferences

Etienne, E., Ochs, M., & Clavel, C. (2025). Étude des biais de genre dans la collaboration multimodale humain-agent : entre observation et simulation [Conference presentation]. *Journée Intelligence Artificielle, Interactions Socio-Affectives et Ethiques*, Paris, France.

Etienne, E., Remacle, A., Leclercq, A.-L., & Schyns, M. (2025). EVE: Emotional Validated Expressions, an acted audiovisual corpus [Poster presentation]. *25th ACM International Conference on Intelligent Virtual Agents (IVA'25)*, Berlin, Germany.

Ristorcelli, M., Etienne, E., Schyns, M., Casanova, R., & Ochs, M. (2025). Evaluating multimodal behavioral features for public speaking assessment in virtual reality [Poster presentation]. *25th ACM International Conference on Intelligent Virtual Agents (IVA'25)*, Berlin, Germany.

Cho, J., Jung, T., tom Dieck, T., Etienne, E., & Schyns, M. (2025). Simulated mock trials in virtual reality: a framework to guide the future of legal education [Conference presentation]. *10th International XR-Metaverse Conference*, Maastricht, Netherlands.

Etienne, E., & Schyns, M. (2025, June). Public Speaking Training in Virtual Reality: A Multidisciplinary and Explainable Approach for Education and Research [Conference presentation]. *AIRSI 2025 Conference*, Online.

Saufnay, S., Etienne, E., & Schyns, M. (2024). The use of virtual reality in public speaking training: Design of a dedicated tool [Conference presentation]. *Laval Virtual Doctoral Consortium*, Laval, France.

Etienne, E., Ristorcelli, M., Saufnay, S., Quilez, A., Casanova, R., Schyns, M., & Ochs, M. (2024). A systematic review on the socio-affective perception of IVAs' multi-modal behaviour [Conference presentation]. *24th ACM International Conference on Intelligent Virtual Agents (IVA'24)*, Glasgow, United Kingdom.

Bettahi, L., Leclercq, A.-L., Schyns, M., Etienne, E., & Remacle, A. (2024). Public speaking: Acoustic characteristics of voice in giving a speech compared to a reading condition [Conference presentation]. *PEVOC 15 Conference*, Santander, Spain.

Etienne, E., Leclercq, A.-L., Remacle, A., & Schyns, M. (2024). EVE: Emotional Voice Expression, an acted audiovisual corpus [Conference presentation]. *AIRSI 2024*

Conference, Zaragoza, Spain.

Saufnay, S., Etienne, E., & Schyns, M. (2024). Development and evaluation of virtual reality environments for public speaking training [Conference presentation]. *AIRSI/ 2024 Conference, Zaragoza, Spain.*

Cho, J., Etienne, E., Schyns, M., & Jung, T. (2024). Towards a framework for the implementation of virtual reality in legal education and training [Conference presentation]. *9th International Conference on XR/VR/Metaverse, Busan, South Korea.*

Bettahi, L., Remacle, A., Schyns, M., Etienne, E., Etienne, A.-M., & Leclercq, A.-L. (2024). Prise de parole en public: Analyse du sentiment de présence et d'immersion face à une audience virtuelle et mise en relation avec l'anxiété [Poster presentation]. *1er Congrès Interdisciplinaire de RUCHE – Santé et éducation à tous les âges de la vie, Liège, Belgium.*

Etienne, E., Leclercq, A.-L., Remacle, A., & Schyns, M. (2024). EVE: un corpus audio-visuel émotionnel acté [Poster presentation]. *1er Congrès Interdisciplinaire de RUCHE – Santé et éducation à tous les âges de la vie, Liège, Belgium.*

Etienne, E., Leclercq, A.-L., Remacle, A., & Schyns, M. (2023). Intégration d'une base de données EmoVox et de la réalité virtuelle pour l'entraînement à la prise de parole en public [Conference presentation]. *Journée ACAI (Plate-forme Intelligence Artificielle), Strasbourg, France.*

Etienne, E., Schyns, M., Cho, J., & Jung, T. (2023). Exploring interactions, immersion, and presence in a virtual reality experience for mootng [Conference presentation]. *8th International Conference on XR/VR/Metaverse, Las Vegas, United States.*

Cho, J., Jung, T., tom Dieck, M., MacLeod, K., Etienne, E., & Schyns, M. (2023). Virtual reality simulation in legal education [Poster presentation]. *MMU Business and Law Doctoral Symposium, Manchester, United Kingdom.*

Etienne, E., Leclercq, A.-L., Remacle, A., & Schyns, M. (2023). EmoVox: Creation of a speech database for emotion analysis [Conference presentation]. *AIRSI/ 2023 Conference, Online.*

Etienne, E., Leclercq, A.-L., Remacle, A., & Schyns, M. (2022). Perception of avatars' attitudes in virtual reality [Conference presentation]. *AIRSI/ 2022 Conference, Online.*

Etienne, E., Leclercq, A.-L., Remacle, A., & Schyns, M. (2022). Perception of avatars' attitudes in virtual reality [Conference presentation]. *7th International Conference on XR/VR/Metaverse, Lisbon, Portugal.*

Vachaud, A., Koubi, C., Cornelis, G., & Etienne, E. (2021). Comment les utilisateurs d'assistants vocaux maintiennent-ils leur utilisation de la technologie dans le temps ? [Conference paper]. *20ème Colloque sur le Marketing Digital, Paris, France.*

Menjot, P., Remacle, A., Schyns, M., Etienne, E., & Leclercq, A.-L. (2021). Validation of a virtual audience for public speaking: Preliminary results [Poster presentation]. *Annual Meeting of the Belgian Association of Psychological Sciences*, Online.

Etienne, E., Leclercq, A.-L., Remacle, A., & Schyns, M. (2021). SpeakInVR: Validation of a virtual audience [Poster presentation]. *Annual Meeting of the Belgian Association of Psychological Sciences*, Online.

Menjot, P., Remacle, A., Schyns, M., Etienne, E., & Leclercq, A.-L. (2020). A virtual audience for public speaking: A pilot study [Poster presentation]. *Meeting of the Groupe de Contact de Psycholinguistique et Neurolinguistique*, Brussels, Belgium

Reviewer

Double-blind peer-reviewed Journal

Journal of Psychology & Marketing

2026:

- *Senses in VR: a Presence Perspective of a Virtual Christmas Market*
- *Real vs. Imagined Sensory Inputs in Virtual Reality: A Construal-Level Based Conceptual Framework and Future Research Directions (Second round)*

2025:

- *Real vs. Imagined Sensory Inputs in Virtual Reality: A Construal-Level Based Conceptual Framework and Future Research Directions (First round)*
- *When Avatars Emote, Users Revolt: The Hidden Cost of Expressiveness in Trust and App Engagement*

2023: *Virtual reality and other video types in destination marketing: Which one is more effective in attracting travelers?*

International Journal of Human-Computer Interaction

2025 : *Avatar or human, who is experiencing it? Impact of social interaction in virtual gaming worlds on personal space (Second round)*

2024: *Avatar or human, who is experiencing it? Impact of social interaction in virtual gaming worlds on personal space (First round)*

Journal of Behaviour & Information Technology

2023: *Working Memory in Virtual Reality: The Case of 3D Avatars vs 2D Video Interfaces*

Double-blind peer-reviewed conferences

ACM Intelligent Virtual Agents Conference (IVA)

2026: *Gender Stereotype Threat in AI-Assisted Negotiation*

Frontiers in Education Conference (FIE)

2026: *Designing an Agentic AI Tutoring System for Personalized Learning in Higher Education*

ACM Designing Interactive Systems (DIS)

2026: *Invisible Strings: A Social Leading Scenario via Imposed Behavioral Synchrony in Virtual Reality*

XR-Metaverse Conference

2025:

- *Being There: A study on the value of olfactory stimuli in VR to enhance presence in, and empathy towards, refugee settlements that incorporate notions of home.*
- *From Complex Tasks to Collaborative Success: Communication and Performance in Virtual Reality Teams*

2024:

- *Development of Grip Strength Reflection System Based on SEMG of the Flexor Digitorum Profundus for Sensory VR Interaction*
- *Enhancing Communication Skills through VR Feedback*

2023:

- *Exploring the Influence of Value Expectations and Personal Characteristics on the Creation of Avatars for Events in the Metaverse*
- *Sustainability communication in VR Learning Environments for perceptual and behavioral change: Raising awareness of sustainable travel behavior*
- *Higher Education Learning in times of The Metaverse*

Scientific Memberships

Association for Computing Machinery - ACM

2024-2026

International Speech Communication Association - ISCA

2023-2024

Royal Statistical Society of Belgium - RSSB

2021-2022

Belgian Association for Psychological Sciences - BAPS

2021-2022

Belgian Operational Research Society - ORBEL

2020-2025

Public Outreach

Podcast (2026) - Micro Sciences

Answering one public question on AI and bias as part of the INRIA Summer Series.

<https://www.linkedin.com/feed/update/urn:li:activity:7480921894129573888/>

Podcast (2025) - Pulse

Podcast highlighting Professors and PhD candidates from HEC Liège

<https://open.spotify.com/episode/4omGamjncnD9SUwkde0Yfs?si=ThdnV1q5R1O0mH7uCrDBMQ>

Ma Thèse en 180 secondes (2025) - National competition

Contest where the aim is to summarise several years of research in just three minutes, in a clear and entertaining way, in front of a jury of experts and a non-specialized audience

<https://youtu.be/WZSFchThct0?si=EnCCY2AP0HCGqfib>

TV Show (2023) - Coûte que Coûte (RTL)

Expert on the Special Edition of the TV Show Featuring Immersive Technologies

https://drive.google.com/file/d/1M-L8kYuCdQXDQ8Zpayq_edta2nTMwVA0/view?usp=sharing

Podcast (2022) - A la Source

Podcast highlighting Professors and Researchers from the University of Liège

https://www.podcasts.uliege.be/cms/c_16608362/fr/elodie-etienne-des-maths-a-la-realite-virtuelle

**Scientific
Exhibitions
&
Events**

Stage 100% IA (2026) - Paris (France)

Talk and speed-meeting with 40 high-school girls during a half-day at the Inria Paris Centre, part of a Sorbonne Université internship tied to Inria's TechPourToutes programme.

Journées Femmes & Sciences (2026) - Marseille (France)

Participant in the Femmes & Sciences days at Aix-Marseille Université (UONI and SoSciences'KM), including a researcher portrait in their « Portraits » series."

PintOfScience (2026) - Paris (France)

Pint of Science Festival, a worldwide science event held in hundreds of cities to make research more accessible to the general public.

Semaine des Mathématiques (2026) - Paris (France)

Mathematics Week aims to give pupils and their parents a modern, lively, and engaging view of mathematics. For its fifteenth edition, the theme is "Equality & Mathematics."

CHICHE (2025) - Paris (France)

Participation in CHICHE, a program to inspire students to pursue scientific and technological careers by delivering a 2-hour interactive classroom session presenting my research topic.

Village des Sciences de Marseille (2024) - Marseille (France)

Participation in the "Women and Sciences" boot organized by CNRS to inspire and encourage girls in middle and high schools to pursue careers in science.

Digital Dialogues (2024) - Ghent (Belgium)

Participation to present our work to the delegates of the states of the European Union.

24th ACM IVA (2024) - Glasgow (United Kingdom)

Student Volunteer at the ACM International Conference on Virtual Agents

Business Breakfast (2023) - Liège (Belgium)

Participated in HEC Liège Business Breakfasts, networking events bringing together business leaders and researchers around academic and industry topics.

ORBEL37 (2023) - Liège (Belgium)

Member of the Organizing Committee of the annual conference of the Belgian Operational Research Society.

South by SouthWest (2022) - Austin (United States of America)

Participation in the "Belgian" boot showcasing of technological advancements from the ULiège.

Printemps des Sciences (2015) - Liège (Belgium)

Participation in the "Mathematics" boot organised by ULiège to promote Sciences to young audiences and the public.