Étienne Peillard

Associate Professor - IMT Atlantique

IMT Atlantique, DAPI - PACCE team, LS2N (UMR CNRS 6004)
Associate member, CNRS IRL CROSSING (France-Australia)
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ORCID: 0000-0002-4429-670X
Date of birth: 15 April 1993 - Nationality: French

Researcher in Virtual and Augmented Reality, Human-Computer Interaction, and human factors. My work examines spatial and body perception, augmented affordances, embodied interaction, and cooperation between humans and autonomous systems.

Academic appointments

Associate Professor - IMT Atlantique, Nantes — Aug. 2026-present
- DAPI department; PACCE team, LS2N (UMR CNRS 6004); associate member, CNRS IRL CROSSING.
- Research and teaching in HCI, immersive systems, interface design, and human factors.

Associate Professor - IMT Atlantique, Brest — Dec. 2020-Jul. 2026
- INUIT team, Lab-STICC (UMR CNRS 6285).
- Scientific leadership and development of the CEXI-HA experimental platform.

Doctoral contract - Centrale Nantes / Inria — Oct. 2017-Nov. 2020
- Perception and interaction in Augmented Reality; Hybrid team and AAU-CRENAU.

Final-year internship - CLARTE — Apr.-Sep. 2017
- Industrial and collaborative Virtual and Augmented Reality applications.

Research project - Centrale Nantes — Sep. 2016-Mar. 2017
- Accommodation-vergence disparity and perception in Augmented Reality.

Research project - Université Paris 13 / UDPN — Jan.-Feb. 2016
- Critical evaluation of digital heritage applications in French museums.

Interdisciplinary project - Université de Nantes / LS2N — Oct.-Dec. 2015
- Interactive AR applications for cultural mediation and archive data.

Second-year internship - LS2N — Apr.-Sep. 2015
- AR applications for technical and heritage objects.

Education and qualifications

PhD - Centrale Nantes (Architecture and Urban Studies) — 2017-2020
- Thesis: Toward a Characterization of Perceptual Biases in Mixed Reality: A Study of Factors Inducing Distance Misperception.
- Supervisors: Guillaume Moreau, Ferran Argelaguet, and Jean-Marie Normand; defended 24 November 2020.

Engineering degree - Centrale Nantes — 2013-2017
- General engineering curriculum; Virtual Reality major; Research major; degree equivalent to a Master's degree.

Classes préparatoires - Dijon — 2010-2013
- Intensive mathematics, physics, and chemistry curriculum.

Habilitation to direct research (HDR) in preparation; defense planned for late 2026 or early 2027.

Research leadership and projects

ANR JCJC PAEIAR — 2025-2028
- Principal investigator; perception of affordances and embodied interaction in Augmented Reality, with the University of Western Brittany.

CEXI-HA experimental platform — 2021-present
- Scientific lead and project manager for IMT Atlantique's immersive interaction, human factors, and augmented-human platform.

ANR ASTRAL — 2024-2027
- Avatars in Augmented Reality, with Clarté, Inria Rennes, and Centrale Nantes.

Body Perception and Morphology in Augmented Reality — 2024-2027
- Body perception, morphology, embodiment, and body-image applications in Augmented Reality.

Urban night-lighting perception — 2025-2028
- CIFRE PhD project with L'Observatoire de la Nuit, AAU-CRENAU, and Lab-STICC.

AR perception: laboratory to real-world applications — 2025-2028
- CROSSING cotutelle PhD with the University of Adelaide; MSCA COFUND AUFRANDE.

ASPIRE Seamless — 2023-2027
- Perceptual continuity between physical reality and AR, with the University of Tokyo.

Deep-space rover teleoperation — 2024-2027
- AI perceptive assistance; CROSSING joint PhD with the University of Adelaide, MSCA COFUND SEED.

UniSA / Naval Group PhD project 2024-2027
- CROSSING joint PhD on 4D narrative visualizations for marine-drone mission reporting.

Awards

- Best Conference Paper Award, IEEE VR 2019.
- 1st prize, IEEE VR 2019 3DUI Contest.

Doctoral and research supervision

Ongoing PhD co-supervisions

Kingsley Stephens - Jun. 2024-May 2027

Thesis: 4D Narrative Visualizations for Marine-Drone Mission Reporting

Juri Yoneyama - Oct. 2024-Sep. 2027

Thesis: Perception and Interaction with Real and Virtual Hands and Objects in Augmented Reality
Thesis-related publications: 2, 5, and 11.

Nazial Kadir - Oct. 2024-Sep. 2027

Thesis: AI Perceptive Assistance During Teleoperations of Rovers in Deep Space

Marie-Cécile Léculier - Nov. 2024-Oct. 2027

Thesis: Study of Body Perception and Morphology in Augmented Reality
Thesis-related publications: 3.

Min Ni - Feb. 2025-Jan. 2028

Thesis: Enhancing Perceptual and Cognitive Processes in Augmented Reality Studies to Real-World Applications
Thesis-related publications: 4.

Anthony Le Gourriérec - May 2025-May 2028

Thesis: Perception and Representation of Urban Night Lighting Ambiances in Virtual Reality
Thesis-related publications: 10.

Yutaro Tanaka - Jan. 2026-Feb. 2029

Thesis: Perception of Affordances and Embodied Interaction in Augmented Reality
Thesis-related publications: 2.

Completed PhD co-supervisions

Aymeric Hénard - defended 5 Dec. 2024

Thesis: Perception and Comprehension of Robot Swarms: Self-Organisation Mechanisms, Human Perception, and Localised Visualisations to Understand Fragmentations
Thesis-related publications: 7, 17, 21, 24, 25, and 33.

Julien Cauquis - defended 2 Jul. 2025

Thesis: Optimizing Sensory Feedback and Manual Interaction Efficiency within XR Experiments
Thesis-related publications: 8.

Thi Thanh Hoa Tran - defended 16 Feb. 2026

Thesis: Improving Autonomous Vehicle Drivers' Confidence via Augmented Reality Visualization of Artificial Intelligence Decision-Making Context
Thesis-related publications: 1, 13, 15, and 18.

Post-doctoral researchers

Marie Jarrell - Nov. 2021-Oct. 2023

Anjara Nobby Rakotoarivelo - Jan.-Dec. 2023

Research engineers

Jérémie Donjat - Dec. 2022-May 2023

Pierre Fayol - Feb.-Dec. 2024

Aymeric Hénard - Dec. 2024-Nov. 2027

Julien Ganne - Jun. 2026-May 2027

Master's students

Guyllian Gomez - Jan.-Jul. 2021
Lucas Bernin - Jan.-Jul. 2022
Hugo Da Maïa - Apr.-Aug. 2022
Daniel Ledoussal - May-Jun. 2022
Nolwenn Paluet - Mar.-Aug. 2023
Clément Jézéquel - Mar.-Aug. 2023
Ambre Daigremont - Apr.-Jul. 2023
Georges Simbe - Jan.-Apr. 2024
Taha Lamine - Feb.-Aug. 2024
Lory Somphonphakdy - Apr.-Aug. 2024
Lucas Thomesse - Apr.-Sep. 2024
Lilas Privateer - Mar.-Aug. 2025
Titouan Aline - Mar.-Aug. 2025
Ewan Durand - Mar.-May 2025
Gauthier Bertram - Apr.-Sep. 2025
Yutaro Tanaka - May-Oct. 2025
Guilhem Mas - Feb.-Aug. 2026
Ewan Durand - Apr.-Sep. 2026

Marie-Cécile Léculier - Feb.-Jun. 2024
Clémence Cunin - Mar.-Aug. 2024
Efflam Rol - Apr.-Aug. 2026
Samuel Lallemand - Apr.-Aug. 2026

Teaching

IMT Atlantique - Engineering program, Nantes — Aug. 2026-present

- Teaching in the DAPI department; responsible for the Front track of the FIL apprenticeship program.
- Human-Computer Interaction, interface design, and interactive systems.

IMT Atlantique - Engineering and Master's programs, Brest — Sep. 2021-Jul. 2026

- Co-responsible for the RVSI track and RVRA teaching unit in the SIIA Master's program.
- Responsible or co-responsible for RVRA, ECoTI, FHEES, LogIHM, TERV, and RAUG teaching units.
- VR/AR, HCI, human factors, experimental methods, immersive visualization, databases, interface design, and project-based learning.
- Regular participation in project and internship juries; supervision of Master's, research, company-sponsored, and interdisciplinary projects; apprenticeship tutoring.

Centrale Nantes - Engineering program — 2017-2020

- Algorithms and programming; computer vision and AR; Unity; advanced VR; industrial and application projects.

École Polytechnique - AI and Advanced Visual Computing Master's program — Feb. 2020

- Six-hour lecture and lab intervention on Augmented Reality.

Publications

Journal articles	Conference papers	Other outputs
9	23	4
h-index (Google Scholar)	Citations (Google Scholar)	Updated
6	208	1 Sep. 2026

Journal articles

1. Thi Thanh Hoa Tran, Étienne Peillard, James Walsh, Guillaume Moreau, Bruce H. Thomas (2026). The influence of virtual character actions and emotional expressions on trust in autonomous vehicles. Virtual Reality, 30, Article 77. doi:10.1007/s10055-026-01334-1
2. Yutaro Tanaka, Juri Yoneyama, Nathalie Le Bigot, Guillaume Moreau, Gilles Coppin, Étienne Peillard (2026). Modulating Perceived Affordances in Augmented Reality Through Object Physicality and Thermal Appearance. IEEE Transactions on Visualization and Computer Graphics.
3. Étienne Peillard, Marie-Cécile Léculier, Malena Joly, Nathalie Le Bigot (2026). Investigating Self-Body Perception and its Effect on Affordance in Augmented Reality. ACM Transactions on Applied Perception, 23(3), 1-20. doi:10.1145/3807944
4. Min Ni, Étienne Peillard, Gilles Coppin, Tim Chen (2026). How Opacity and Background Affect Surface Contact Perception in Optical See-Through AR. IEEE Transactions on Visualization and Computer Graphics.
5. Juri Yoneyama, Étienne Peillard, Guillaume Moreau, Ferran Argelaguet (2026). Grasping Real and Virtual Objects in AR: Study of Carry-Over Effects on Grasping Anticipatory Behavior. IEEE Transactions on Visualization and Computer Graphics.
6. Marie Jarrell, Étienne Peillard (2026). AR Filters Change How We Think, Not Who We Like: Effects of Role and Age Embodiment on Cognitive Performance and Age Bias. Frontiers in Virtual Reality, 7, 1739451. doi:10.3389/frvir.2026.1739451
7. Aymeric Hénard, Étienne Peillard, Jérémy Rivière, Sébastien Kubicki, Gilles Coppin (2025). Towards Augmented Reality Support for Swarm Monitoring: Evaluating Visual Cues to Prevent Fragmentation. IEEE Transactions on Visualization and Computer Graphics. doi:10.1109/TVCG.2025.3616840
8. Julien Cauquis, Étienne Peillard, Lionel Dominjon, Thierry Duval, Guillaume Moreau (2024). Investigating Whether the Mass of a Tool Replica Influences Virtual Training Learning Outcomes. IEEE Transactions on Visualization and Computer Graphics, 30(5), 2411-2421. doi:10.1109/TVCG.2024.3372041
9. Yuan Gao, Étienne Peillard, Jean-Marie Normand, Guillaume Moreau, Yue Liu, Yongtian Wang (2020). Influence of virtual objects' shadows and lighting coherence on distance perception in optical see-through augmented reality. Journal of the Society for Information Display. doi:10.1002/jsid.832

Conference papers and workshop contributions

10. Anthony Le Gourriérec, Étienne Peillard, Nicolas Houel, Myriam Servières (2026). The Nocturnity Scale: Measuring the Sense of Being at Night in Virtual Urban Environments. ACM Symposium on Applied Perception (SAP 2026). doi:10.1145/3821409.3833894
11. Juri Yoneyama, Étienne Peillard, Guillaume Moreau, Ferran Argelaguet (2026). Interacting with Two Dominant Hands in AR: A Study of Aimed Motions with Real and Spatially Displaced Virtual Hands. ACM Symposium on Spatial User Interaction (SUI 2026). doi:10.1145/3822518.3830066
12. Gauthier Bertram, Takefumi Hiraki, Yuichi Hiroi, Étienne Peillard, Jean-Marie Normand (2026). Depth Perception in Soft-Edge Occlusion-Capable Optical See-Through Head-Mounted Displays. IEEE Virtual Reality Workshops 2026. doi:10.1109/VRW70859.2026.00140
13. Thi Thanh Hoa Tran, Étienne Peillard, James Walsh, Guillaume Moreau, Bruce H. Thomas (2025). Trust and Safety in Autonomous Vehicles: Evaluating Contextual Visualizations for Highlighting, Prediction, and Anchoring. ICAT-EGVE 2025: International Conference on Artificial Reality and Telexistence and Eurographics Symposium on Virtual Environments, The Eurographics Association. doi:10.2312/egve.20251351
14. Yuta Itoh, Étienne Peillard, Yuichi Hiroi, Takefumi Hiraki (2025). The 2nd Workshop on Seamless Reality: AR Technologies for Seamless Perception and Cognition between Cyber and Physical Spaces. IEEE Virtual Reality Abstracts and Workshops 2025.
15. Thi Thanh Hoa Tran, Étienne Peillard, James Walsh, Guillaume Moreau, Bruce H. Thomas (2025). Impact of Adding, Removing and Modifying Driving and Non-Driving Related Information on Trust in Autonomous Vehicles. 2025 IEEE Conference on Virtual Reality and

3D User Interfaces Abstracts and Workshops (VRW), pp. 1262-1263. doi:10.1109/VRW66409.2025.00277

16. Aymeric Hénard, Titouan Aline, Étienne Peillard, Guillaume Moreau (2025). Hands Off, Avatars On: Towards a Modular Approach for Real-Time Body Modification in AR. IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct 2025). doi:10.1109/ISMAR-Adjunct68609.2025.00303
17. Jérémy Rivière, Aymeric Hénard, Étienne Peillard, Sébastien Kubicki, Gilles Coppin (2025). Exploration du modèle MUCAS basé sur les Boids de Reynolds pour l'obtention de différents comportements collectifs. Journées Francophones sur les Systèmes Multi-Agents (JFSMA 2025).
18. Taha Lamine, Thi Thanh Hoa Tran, Badr Hirchoua, Étienne Peillard, James Walsh (2025). Examining the impact of AR Weather Customization on Trust in Autonomous Vehicles. 2025 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct), pp. 583-589. doi:10.1109/ISMAR-Adjunct68609.2025.00116
19. Lilas Privateer, Étienne Peillard, Tobias Loetscher (2025). Embodied Interaction and Habituation in Virtual Reality: A Digital Anthropological Inquiry. RC33 11th International Conference on Social Science Methodology (11ICSSM 2025).
20. Lucas Thomesse, Julien Cauquis, Étienne Peillard, Lionel Dominjon, Thierry Duval, Guillaume Moreau (2024). The Influence of a Prop Mass on Task Performance in Virtual Reality. International Conference on Artificial Reality and Telexistence and Eurographics Symposium on Virtual Environments (ICAT-EGVE 2024). doi:10.2312/egve.20241354
21. Aymeric Hénard, Étienne Peillard, Jérémy Rivière, Sébastien Kubicki, Gilles Coppin (2024). Human perception of swarm fragmentation. ACM/IEEE international conference on human-robot interaction (HRI'24). doi:10.1145/3610977.3634961
22. Étienne Peillard, Clémence Cunin, Gilles Coppin, Thierry Duval (2024). A Study on Improving Attention Redirection in Complex Systems Using Augmented Reality Cues. International Conference on Artificial Reality and Telexistence and Eurographics Symposium on Virtual Environments (ICAT-EGVE 2024). doi:10.2312/egve.20241365
23. Marie Jarrell, Étienne Peillard (2023). Using Identification with AR Face Filters to Predict Explicit and Implicit Gender Bias. 2023 IEEE International Symposium on Mixed and Augmented Reality (ISMAR), 49-58. doi:10.1109/ISMAR59233.2023.00019
24. Jérémy Rivière, Aymeric Hénard, Étienne Peillard, Sébastien Kubicki, Gilles Coppin (2023). How to Grasp the Complexity of Self-Organised Robot Swarms?. FRCCS 2023: French Regional Conference on Complex Systems. doi:10.5281/zenodo.7957531
25. Aymeric Hénard, Jérémy Rivière, Étienne Peillard, Sébastien Kubicki, Gilles Coppin (2023). A unifying method-based classification of robot swarm spatial self-organisation behaviours. doi:10.1177/10597123231163948
26. Rebecca Fribourg, Étienne Peillard, Rachel McDonnell (2021). Mirror, mirror on my phone: Investigating dimensions of self-face perception induced by augmented reality filters. Proceedings - 2021 IEEE International Symposium on Mixed and Augmented Reality, ISMAR 2021. doi:10.1109/ISMAR52148.2021.00064
27. Étienne Peillard, Yuta Itoh, Guillaume Moreau, Jean-Marie Normand, Anatole Lécuyer, Ferran Argelaguet (2020). Can Retinal Projection Displays Improve Spatial Perception in Augmented Reality?. Proceedings - 2020 IEEE International Symposium on Mixed and Augmented Reality, ISMAR 2020. doi:10.1109/ISMAR50242.2020.00028
28. Étienne Peillard, Thomas Thebaud, Jean-Marie Normand, Ferran Argelaguet, Guillaume Moreau, Anatole Lécuyer (2019). Virtual Objects Look Farther on the Sides : The Anisotropy of Distance Perception in Virtual Reality. IEEE Virtual Reality Conference. doi:10.1109/VR.2019.8797826
29. Étienne Peillard, Ferran Argelaguet, Jean-Marie Normand, Anatole Lécuyer, Guillaume Moreau (2019). Studying exocentric distance perception in optical see-through augmented reality. Proceedings - 2019 IEEE International Symposium on Mixed and Augmented Reality, ISMAR 2019. doi:10.1109/ISMAR.2019.00-13
30. Hugo Brument, Rebecca Fribourg, Gerard Gallagher, Thomas Howard, Flavien Lecuyer, Tiffany Luong, Victor Mercado, Étienne Peillard, Xavier De Tinguy, Maud Marchal (2019). Pyramid escape: Design of novel passive haptics interactions for an immersive and modular scenario. 26th IEEE Conference on Virtual Reality and 3D User Interfaces, VR 2019 - Proceedings. doi:10.1109/VR.2019.8797848
31. Étienne Peillard, Myriam Servières, Jean-Marie Normand (2017). RA-Go: a SAR Go Interface. IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2017), Demo session.
32. Étienne Peillard, Lionel Dominjon, Alexandre Bouchet (2017). CollabAVR: A Collaborative Application in Augmented and Virtual Reality. IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2017), Demo session.

Other research outputs and doctoral thesis

33. Jérémy Rivière, Aymeric Hénard, Sébastien Kubicki, Étienne Peillard, Gilles Coppin (2025). Visualisations des mécanismes micro pour appréhender la complexité des systèmes distribués auto-organisés.
34. Aymeric Hénard, Jérémy Rivière, Étienne Peillard, Sébastien Kubicki, Gilles Coppin (2024). Evaluation of augmented visualisations to prevent the fragmentation of robot swarm. Preprint, HAL.
35. Étienne Peillard (2021). Toward a Characterization of Perceptual Biases in Mixed Reality : A Study of Factors Inducing Distance Misperception.
36. Florent Laroche, Étienne Peillard (2016). Vers un patrimoine numérique des connaissances historiques : le projet Nantes 1900. Digital Week, Nantes, France.

International collaborations

- Adelaide University (formed in 2026 from the University of Adelaide and University of South Australia): cotutelle, PhD, and internship supervision through MSCA COFUND AUFRANDE and SEED; AR, autonomous-systems trust, digital anthropology, marine-drone visualization, and CNRS IRL CROSSING partnership.
- University of Tokyo / Institute of Science Tokyo: long-standing collaboration with Yuta Itoh; ASPIRE Seamless; PHC Sakura; six-month research stay.
- Beijing Institute of Technology: AR perception and virtual-shadow research with Yue Liu and Yuan Gao.
- AAU-CRENAU and L'Observatoire de la Nuit: spatial perception, urban digital models, and CIFRE PhD partnership.

Academic service

- IEEE VR: reviewer since 2020; Program Committee since 2021; Tutorial Chair in 2025 and 2026.

- IEEE ISMAR: reviewer since 2019; Program Committee since 2020; organizing committee member in 2017.
- ICAT-EGVE Program Committee since 2022; ACM VRST Program Committee in 2022, 2025, and 2026; ACM SAP Program Committee in 2025 and 2026, and Best Paper Committee in 2026.
- Reviewer for Presence, IEEE TVCG, Computers & Graphics, ACM TAP, and Frontiers in Virtual Reality; external reviewer for SIGGRAPH 2026 posters.
- Organizer of PERCxR (2020-2022), Seamless Reality workshops (IEEE VR 2024-2026; IEEE ISMAR 2025), and NII Shonan Meeting No. 242 - Seamless Reality (2026).
- IEEE VR 2023 organizing committee; facilitator of the Interaction working group within CNRS IRL CROSSING; communications and website officer for GDR IG-RV until 2026.

Institutional responsibilities and outreach

- Responsible for the Front track of IMT Atlantique's FIL apprenticeship program and associated teaching units (since 2026).
- Scientific lead and project manager for CEXI-HA; co-deputy for teaching in the Computer Science department (2023-2026); co-responsible for RVSI and RVRA (2022-2026).
- Student and doctoral representative on Centrale Nantes boards (2014-2020); AAU Laboratory Council member (2019-2020).
- Public engagement: Pint of Science 2018; Innovatives SHS 2019 presentation of the Coraulis project.

Additional information: interests include fencing; Go (French federation instructor and president of the Brest club); travel; photography.