

Romain Vuillemot

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École Centrale de Lyon (ECL), LIRIS Lab, CNRS UMR 5205
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Education

- 2016 – ... Assistant Professor, École Centrale de Lyon, France
SICAL team (LIRIS Lab)
- 2016 Invited Researcher, INSA Lyon, France
SICAL team (LIRIS Lab)
- 2013 – 2016 Research Fellow, Harvard University, Cambridge, USA
CID Harvard Kennedy School of Government
- 2011 – 2013 Post-doc, Inria Saclay, France
AVIZ Team
- 2010 – 2011 Post-doc, INSA Lyon, France
Database team (LIRIS Lab UMR 5205)
- 2010 PhD in Computer Science, INSA Lyon, France
Information Retrieval team (LIRIS Lab)
- 2008 Invited researcher (6 months), University of Maryland (USA),
HCIL (Human-Computer Interaction Lab)
- 2004 - 2006 Master in Computer Science, Univ. Lyon 1 / INSA Lyon

Grants and Scholarships

- 2025 - 2029 **Advanced Visualizations in Sports Videos (SPORTSVIZ)**
ANR 210k€ *Partners: ECL (PI), Inria Saclay, Inria Grenoble.*
- 2022 - 2026 **Graphical Languages for Creating Infographics (GLACIS)**
ANR 143k€ *Partners: Inria Saclay (PI), Inria Sophia, ECL.*
- 2020 - 2024 **Improving Elite Swimmers performance (Neptune)**
PIA 234 K€ *Partners: Univ. Rouen (PI), ECL, French Swimming Federation, + 12 more*
- 2017 - 2021 **Integrated Mobility in Ile de France**
PIA 664 k€ *Partners: Transdev, ECL, Ile de France Mobilite, Citiway, + 6 more*
- 2022 - 2025 **Visual Analysis of Table Tennis Tactics**
FFTT 20 k€ *ECL (PI), French Federation of Table Tennis (FFTT)*
- 2021-2012 **Visual discovery in table tennis data**
LIRIS 7.5 k€ *Interns and travels*

- 2022 - 2025 **Visual Analysis of Table Tennis Tactics** (PhD Scholarship)
ECL 100 k€ *Student: Aymeric Erades*
- 2019 - 2022 **Automatic Analysis of Swimming Race Videos** (PhD Scholarship)
CNRS 100 k€ *Student: Nicolas Jacquelin*
- 2017 - 2021 **Deep Neural Networks Interpretability** (PhD Scholarship)
INSA Lyon 100 k€ *Student: Théo Jaunet*
- 2018 - 2019 **Infrastructure for spatio-temporal data exploration**
ECL 30 k€ *Virtual Reality Headsets, Laptops, Interns*
- 2018 **Building a collaborative network in Japan**
FR Embas. 2.5 k€ *Travel and seminars in Tokyo, Japan*
- 2016 - 2017 **Kicking-off visual analytics in Lyon**
LYON 65 k€ *Post-Docs: Stefania Dumbrava & Jorge Martinez-Rey*
- 2016 - 2018 **Visualisations of parametric spaces**
LIRIS 2.5 k€ *Interns*

Teaching

- 2016 - 2024 Algorithms and Data Structures in Python (**Coordinator**)
1A/L3 *Lectures (2×4×2h of lectures, 400 students) and Labs (2x20h, 25 students)*
- 2023 - 2024 Fundamentals of Algorithms Bachelor Data Science R.B. (**Coordinator**).
Bachelor/L1 *Lectures and Tutorials (56h) (15 students)*
- 2016 - 2024 Object-Oriented Programming
1A/L3 *Tutorials (2×20h, 25 students)*
- 2016 - 2024 Web Programming
1A/L3 *Tutorials (2××18h, 25 students) and Projects*
- 2017 - 2024 Interactive Data Visualization (**Coordinator**)
3A/M2 *Lectures (12h) and Tutorials (18h, 45 students)*
- 2016 - 2021 Enterprise Information Systems (**Coordinator**)
3A/M2 *Lectures (14h) and Tutorials (20h, 51 students)*
- 2019-2021 Traffic Data Visualization (**Coordinator**)
3A/M2 *Lectures (4h, 15 students) Option/Master Road Traffic Modeling*

Awards

- 2023 - 2026 RIPEC-3 - Research fellowship award
- 2021 - 2022 CRCT CNRS sabbatical (6 months) at LIRIS
- 2019 - 2022 PEDR - Research fellowship award
- 2018 Invitation to Shonan Seminar on Virtual Reality
- 2020 Best workshop submission (top 1) workshop VISXAI'20 [[C35](#)]
- CHI'15 Honorable mention note award (top 5%) [[C47](#)]
- INFOVIS'15 Honorable mention poster award (top 3) [[C45](#)]

INFOVIS'13 Honorable mention article (top 3) [J54]

Duties

- 2018-... Co-responsible for the Visualization Working Group (GT Visu) of the CNRS GDR IG RV (annual day organization, coordinating the national community)
- 2026-... Responsible for the Amigo Platform (Motion Capture and Video Tracking)
- 2022-... Elected member of the Math-CS Department at ECL
- 2021-... Appointed member of the LIRIS Lab council
- 2020-... Scientific referent for Sciences2024 at ECL
- 2019-... Member of the LIRIS industrial group
- 2017-... Member of the UE PRO ECL conference board
- 2018-2021 Member of the working group on skill evaluation at ECL
- 2017-2020 Elected member of the ECL Studies Council
- 2018-2019 Member of the working group on intercalary weeks at ECL

Supervision

- 2018-2022 PhD Théo Jaunet (50%) *Transparency and Explainability of Machine Learning*
- 2018-2022 PhD Liqun Liu (90%) *Visualization of Spatial and Temporal Road Traffic Data*
- 2019-2022 PhD Nicolas Jacquelin (50%) *Video Extraction of Sports Movements*
- 2022-2025 PhD Aymeric Erades (100%) *Game Tactic Analysis in Table Tennis*
- 2018-2020 PostDoc Philippe Rivière (100%) *Visualization of Geo-Spatial Data*
- 2018-2019 PostDoc Thomas Leysen (100%) *Visualization of Urban Accessibility Data*
- 2017 PostDoc Stefania Dumbrava (30%) *Vis. of Queries in Aggregated Graphs* (3 months)
- 2017 PostDoc Jorge Martinez-Rey (100%) *Visualization of Parametric Spaces* (6 months)
- 2020 Engineer Renaud Jester (100%) *Swimmers video tracking*
- 2020 Engineer Théo Jaunet (100%) *Swimmers video annotation tool*
- 2020 Engineer Nicolas Jacquelin (100%) *Swimmers video tracking pipeline*
- 2023 Engineer Farouk Midel (100%) *Swimmers video tracking pipeline*
- 2024 Engineer Thomas Papon (100%) *Swimmers motion capture using video and sensors*

Seminars (main)

- March 2024 Visualization of gameplay tactics in table tennis.
IRISA laboratory seminar, (Rennes, FR)
- June 2022 Sports data visualization.
INSEP seminar, (virtual)
- June 2022 Advances in swimmer video tracking.
Sciences 2024 Conference, (Paris, FR)

- May 2022 Sports data visualization.
INSEP seminar, (virtual)
- September 2021 Video tracking of competitive swimmers.
Aquatics Conference, (INSEP, Paris, FR)
- May 2021 Sports data visualization.
DEVI seminar, (Toulouse, virtual)
- Nov. 2020 Extraction, analysis, and visualization of data from the covid-nma project.
SIF Pandemic Day, (Paris, virtual)
- May 2019 Participation in a prospective panel on Visualization.
GT Visu Day, (Paris, FR) Report: [C33]

Dissemination

- 20/06/24 *Voile, aviron, natation... Comment la science pourrait démultiplier le nombre de nos médailles aux JO de Paris 2024*, Marianne
- 20/03/24 *How science can improve sporting performance*, Polytechnic Insight
- 23/06/20 *Covid-19 : l'indispensable apport de la science des données*, CNRS Journal
- 25/06/20 *Big data for visual analysis*, RCF Radio
- 10/09/23 *Fête de la Science*, Ecole Centrale de Lyon
- 2021-... *Hosting interns, high school students visits, etc.*, Ecole Centrale de Lyon

Program Committee

- IEEE InfoVis 2015, 2016, 2017, 2020, 2021, 2023, 2024
- IVAPP/visigrapp Area chair 2019, 2020 section *General Data Visualization*.
- ACM CHI 2020, 2025
- ACM WWW'18 Panels session co-chair (with Angela Bonifati, LIRIS Lyon 1)

Tutorials

- SCIENCES'24 Tutorial Video Tracking and Visualization in Sports (Dinar, FR)
- IEEE VIS'22 Tutorial Sports Data Analysis and Visualization (Oklahoma, USA)
- ACM WWW'18 Tutorial Dataviz co-organised with Jeremy Boy (United Nations, USA)

Reviewing / expertise

- Journals/confs CGA, TVCG, IEEE Vis, IV, CGF, EuroVis, CHI
- Expertise IDEX (2020), UI Consulting
- Examineur jury de thèse Almouctar Hassoumi (ENAC, thèse dirigée par Christophe Hurter)
Jiazhou Liu (Monash University, thèse dirigée par Prof. Tim Dwyer (main),
Dr. Barrett Ens, and Dr. Arnaud Prouzeau.)

Journals	TVCG (IF: 3.078) [J4, J16, J20, J37, J39, J48, J51, J52, J54], CGF (IF: 2.046) [J23, J27, J38], JCE (IF: 6.437) [J28], PRL : [J12], CGA : [J8, J41], Cartographic Journal: [J3]
Proceedings	MediaEval benchmark [C2, C7]
International conferences	CVPR [C21] (IF: 45.17), CHI : [C47, C49] (note) [C46] (ea) Other : [C5, C9, C11, C13, C22, C25, C26, C29, C32]
National conferences	[C58] (vast) [C6, C15, C24, C34]
International workshops	[C1, C10, C17, C18, C42, C53], Vis workshop [C31, 36, C44, C55] IxAI [C30, C35] [C19] [C24] [57] Organisation : [C43]
National workshops	[C40] [C33]
Poster	[50] [C45]
Preprint	[14]
PhD	[56]

Journals

- J.3 Liqun Liu, Romain Vuillemot, Philippe Rivière, Jeremy Boy, and Aurélien Tabard. “Generalizing OD-Maps to Explore Multi-Dimensional Geospatial Datasets”. In: The Cartographic Journal. Feb. 2024
- J.4 Lijie Yao, Romain Vuillemot, Anastasia Bezerianos, and Petra Isenberg. “Designing for Visualization in Motion: Embedding Visualizations in Swimming Videos”. In: IEEE Transactions on Visualization and Computer Graphics 3. Mar. 2024, pp. 1821–1836
- J.8 Liqun Liu and Romain Vuillemot. “A Generic Interactive Membership Function for Categorization of Quantities”. In: IEEE Computer Graphics and Applications. Sept. 2023, pp. 39–48
- J.12 Nicolas Jacquelin, Romain Vuillemot, and Stefan Duffner. “Periodicity Counting in Videos with Unsupervised Learning of Cyclic Embedding”. In: Patterns Recognition Letter. 2022
- J.16 Lijie Yao, Anastasia Bezerianos, Romain Vuillemot, and Petra Isenberg. “Visualization in Motion: A Research Agenda and Two Evaluations”. In: IEEE Transactions on Visualization and Computer Graphics 10. Oct. 2022, pp. 3546–3562
- J.20 Theo Jaunet, Corentin Kervadec, Romain Vuillemot, Grigory Antipov, Moez Baccouche, and Christian Wolf. “VisQA: X-raying Vision and Language Reasoning in Transformers”. In: IEEE Transactions on Visualization and Computer Graphics. Oct. 2021
- J.23 Romain Vuillemot, Philippe Rivière, Anaëlle Beignon, and Aurélien Tabard. “Boundary Objects in Design Studies: Reflections on the Collaborative Creation of Isochrone Maps”. In: Computer Graphics Forum (Euro-Vis’21). June 2021

- J.27 T. Jaunet, R. Vuillemot, and C. Wolf. “DRLViz: Understanding Decisions and Memory in Deep Reinforcement Learning”. en. In: Computer Graphics Forum (EuroVis’20) 3. 2020, pp. 49–61
- J.28 Van Thu Nguyen, Philippe Rivière, Pierre Ripoll, Julien Barnier, Romain Vuillemot, Gabriel Ferrand, Sarah Cohen-Boukha, Philippe Ravaud, Isabelle Boutron, and al. et. “Research response to COVID-19 needed better coordination and collaboration: a living mapping of registered trials”. en. In: Journal of Clinical Epidemiology. Oct. 2020, pp. 107–116
- J.37 C. Hurter, N. H. Riche, S. M. Drucker, M. Cordeil, R. Alligier, and R. Vuillemot. “FiberClay: Sculpting Three Dimensional Trajectories to Reveal Structural Insights”. In: IEEE Transactions on Visualization and Computer Graphics (VIS’18) 1. Oct. 2018, pp. 704–714
- J.38 C. Perin, R. Vuillemot, C. D. Stolper, J. T. Stasko, J. Wood, and S. Carpendale. “State of the Art of Sports Data Visualization”. en. In: Computer Graphics Forum (EuroVis’18) 3. 2018, pp. 663–686
- J.39 R. Vuillemot and J. Boy. “Structuring Visualization Mock-Ups at the Graphical Level by Dividing the Display Space”. In: IEEE Transactions on Visualization and Computer Graphics (VIS’17) 1. Oct. 2017, pp. 424–434
- J.41 R. Vuillemot and C. Perin. “Sports Tournament Predictions Using Direct Manipulation”. In: IEEE Computer Graphics and Applications 5. Sept. 2016, pp. 62–71
- J.48 A. Lex, N. Gehlenborg, H. Strobel, R. Vuillemot, and H. Pfister. “UpSet: Visualization of Intersecting Sets”. In: IEEE Transactions on Visualization and Computer Graphics 12. Dec. 2014, pp. 1983–1992
- J.51 F. Chevalier, R. Vuillemot, and G. Gali. “Using Concrete Scales: A Practical Framework for Effective Visual Depiction of Complex Measures”. In: IEEE Transactions on Visualization and Computer Graphics 12. Dec. 2013, pp. 2426–2435
- J.52 S. Huron, R. Vuillemot, and J.-D. Fekete. “Visual Sedimentation”. In: IEEE Transactions on Visualization and Computer Graphics 12. Dec. 2013, pp. 2446–2455
- J.54 C. Perin, R. Vuillemot, and J.-D. Fekete. “SoccerStories: A Kick-off for Visual Soccer Analysis”. In: IEEE Transactions on Visualization and Computer Graphics 12. Dec. 2013, pp. 2506–2515

International Conferences

- C.11 Nicolas Jacquelin, Romain Vuillemot, and Stefan Duffner. “Efficient One-Shot Sports Field Image Registration with Arbitrary Keypoint Segmentation”. In: *IEEE International Conference on Image Processing*. Oct. 2022

- C.13 Liqun Liu and Romain Vuillemot. “GROUPSET: Set-Based Visual Analysis of Change”. In: *Computer Graphics Forum (EuroVis’22)*. June 2022
- C.21 Corentin Kervadec, Theo Jaunet, Grigory Antipov, Moez Baccouche, Romain Vuillemot, and Christian Wolf. “How Transferable Are Reasoning Patterns in VQA?” en. In: *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2021, pp. 4207–4216
- C.22 Liqun Liu and Romain Vuillemot. “Categorizing Quantities using an Interactive Fuzzy Membership Function”. In: *The 12th International Conference on Information Visualisation Theory and Applications*. Feb. 2021
- C.25 Jules Allegre and Romain Vuillemot. “Visualizing and Analyzing Disputed Areas in Soccer”. In: *Visualization in Data Science*. Oct. 2020
- C.26 François Homps, Yohan Beugin, and Romain Vuillemot. “ReViVD: Exploration and Filtering of Trajectories in an Immersive Environment using 3D Shapes”. In: *IEEE Virtual Reality (VR)*. Mar. 2020
- C.29 Gabin Rolland, Romain Vuillemot, Wouter Bos, and Nathan Rivière. “Characterization of Space and Time-Dependence of 3-Point Shots in Basketball”. In: *MIT Sloan Sports Analytics Conference*. Mar. 2020
- C.32 Stefania Dumbrava, Angela Bonifati, Amaia Nazabal Ruiz Diaz, and Romain Vuillemot. “Approximate Querying on Property Graphs”. en. In: Nahla Ben Amor, Benjamin Quost, and Martin Theobald eds. *Scalable Uncertainty Management*. Lecture Notes in Computer Science. 2019, pp. 250–265
- C.47 Romain Vuillemot and Charles Perin. “Investigating the Direct Manipulation of Ranking Tables for Time Navigation”. In: *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*. CHI ’15. 2015, pp. 2703–2706
- C.49 Charles Perin, Romain Vuillemot, and Jean-Daniel Fekete. “A Table!: Improving Temporal Navigation in Soccer Ranking Tables”. In: *Proceedings of the 32nd Annual ACM Conference on Human Factors in Computing Systems*. CHI ’14. 2014, pp. 887–896
- C.58 R. Vuillemot, T. Clement, C. Plaisant, and A. Kumar. “What’s being said near #x201C;Martha #x201D;? Exploring name entities in literary text collections”. In: *2009 IEEE Symposium on Visual Analytics Science and Technology*. Oct. 2009, pp. 107–114

Workshops, Posters and Demos

- C.1 Aymeric Erades, Pierre-Etienne Martin, Romain Vuillemot, Boris Mansencal, Renaud Péteri, Julien Morlier, Stefan Duffner, and Jenny Benois-Pineau. “SportsVideo: A Multimedia Dataset for Sports Event and Position Detection in Table Tennis and Swimming”. In: *MediaEval 2023 Workshop collocated with MMM 2024*. Feb. 2024

- C.2 Steven Hicks, Andreas Lommatzsch, Ali Hürriyetoglu, Romain Vuillemot, Mihai Gabriel Constantin, Vajira Thambawita, and Martha A. Larson, eds. *Working Notes Proceedings of the MediaEval 2023 Workshop, Amsterdam, The Netherlands and Online, 1-2 February 2024*. Vol. 3658. CEUR Workshop Proceedings.
- C.5 Gabin Calmet, Aymeric Erades, and Romain Vuillemot. “Exploring Table Tennis Analytics: Domination, Expected Score and Shot Diversity”. In: Springer Link ed. *Machine Learning and Data Mining for Sports Analytics*. Communications in Computer and Information Science. Sept. 2023
- C.6 Aymeric Erades and Romain Vuillemot. “Visual Analysis of Table Tennis Game Tactics”. In: *Journée Visu*. June 2023
- C.7 Steven Hicks, Alba García Seco de Herrera, Johannes Langguth, Andreas Lommatzsch, Stelios Andreadis, Minh-Son Dao, Pierre-Etienne Martin, Ali Hürriyetoglu, Vajira Thambawita, Tor-Arne S. Nordmo, Romain Vuillemot, and Martha Larson. *Working Notes Proceedings of the MediaEval 2022 Workshop*. CEUR Workshop Proceedings. Publication Title: CEUR Workshop Proceedings 3583.
- C.9 Pierre Duluard, Xinqing Li, Marc Plantevit, Céline Robardet, and Romain Vuillemot. “Discovering and Visualizing Tactics in a Table Tennis Game Based on Subgroup Discovery”. In: *Communications in Computer and Information Science book series*. Sept. 2022, pp. 1–13
- C.10 Alaul Islam, Lijie Yao, Anastasia Bezerianos, Tanja Blascheck, Tingying He, Bongshin Lee, Romain Vuillemot, and Petra Isenberg. “Reflections on Visualization in Motion for Fitness Trackers”. In: *MobileHCI 2022 Workshop on New Trends in HCI and Sports*. Sept. 2022
- C.17 Nicolas Jacquelin, Théo Jaunet, Romain Vuillemot, and Stefan Duffner. “SwimTrack: Swimmers and Stroke Rate Detection in Elite Race Videos”. In: *MediaEval Workshop 2022*. MediaEval (Multimedia Evaluation Benchmark). 2021
- C.18 Nicolas Jacquelin, Romain Vuillemot, and Stefan Duffner. “Detecting Swimmers in Unconstrained Videos with Few Training Data”. In: *Communications in Computer and Information Science book series*. Sept. 2021
- C.19 Theo Jaunet, Guillaume Bono, Romain Vuillemot, and Christian Wolf. “SIM2REALVIZ: Visualizing the Sim2Real Gap in Robot Ego-Pose Estimation”. In: *1st Workshop on eXplainable AI approaches for debugging and diagnosis (XAI4Debugging@NeurIPS2021)*. Sept. 2021
- C.30 Christian Wolf Theo Jaunet Romain Vuillemot. “Theo guesser”. In: *Proceedings of the Workshop on Visualization for AI explainability (VISxAI)*. 2020
- C.31 R. Vuillemot. “The Sawtooth Chart for Compact Cumulative Data Visualization”. In: *BioVis Workshop at IEEE VIS20*. Oct. 2020, pp. 1–2

- C.35 Christian Wolf Theo Jaunet Romain Vuillemot. “What if we Reduce the Memory of an Artificial Doom Player?” In: *Proceedings of the Workshop on Visualization for AI explainability (VISxAI)*. 2019
- C.42 Romain Vuillemot, Jeremy Boy, Aurélien Tabard, Charles Perin, and Jean-Daniel Fekete. “Challenges in Logging Interactive Visualizations and Visualizing Interaction Logs”. In: *Proc. of Workshop on Logging Interactive Visualizations and Visualizing Interaction Logs*. 2016, p. 2
- C.44 Romain Vuillemot and Samuel Huron. “Glitches as a Generative Design Process”. en. In: *IEEE VIS 2016 Arts Program proceedings*. Oct. 2016, p. 6
- C.45 Owen Cornec and Romain Vuillemot. “Visualizing the Scale of World Economies”. In: *IEEE Vis Poster*. IEEE Vis Poster. 2015, p. 2
- C.46 Romain Vuillemot and Mehmet Akmanalp. “Towards Text Search for Information Visualization Retrieval”. In: *Proceedings of the 33rd Annual ACM Conference Extended Abstracts on Human Factors in Computing Systems*. CHI EA '15. 2015, pp. 1821–1826
- C.53 Samuel Huron, Romain Vuillemot, and Jean-Daniel Fekete. “Bubble-TV: Live Visual Feedback for Social TV Broadcast”. In: *ACM CHI 2013 Workshop : Exploring and enhancing the user experience for television*. Apr. 2013
- C.55 Charles Perin, Romain Vuillemot, and Jean-Daniel Fekete. “Real-Time Crowdsourcing of Detailed Soccer Data”. In: *What's the score? The 1st Workshop on Sports Data Visualization*. Oct. 2013

Proceedings

- C.43 Romain Vuillemot, Jeremy Boy, Aurélien Tabard, Charles Perin, and Jean-Daniel Fekete. *LIVVIL: Logging Interactive Visualizations and Visualizing Interaction Logs*. en.

National conferences

- C.15 Lijie Yao, Anastasia Bezerianos, Romain Vuillemot, and Petra Isenberg. “Situating Visualization in Motion for Swimming”. In: *Journée Visu 2022*. Journée Visu. June 2022
- C.24 Romain Vuillemot, Philippe Rivière, Anaëlle Beignon, and Aurélien Tabard. “Conception d’une carte isochrone simplifiée pour visualiser l’accessibilité aux transports urbains”. In: *Cartomob*. June 2021
- C.34 Theo Jaunet, Romain Vuillemot, and Christian Wolf. “RLMViz: Interpreting Deep Reinforcement Learning Memory”. In: *Journée Visu 2019*. May 2019
- C.40 Romain Vuillemot. “Exploration Visuelle de Données Spatio-Temporelles Brutes”. fr. In: *Atelier Visualisation d’informations, interaction et fouille de données*. Jan. 2017, p. 3

Reports

- C.33 Samuel Huron, Nadia Boukhelifa, Thomas Baudel, Caroline Goulard, Petra Isenberg, Julien Tierny, and Romain Vuillemot. *Visualization Trends in France*. In: Oct. 2019. UMR GMPA, AgroParisTech, INRA ; SID - Sociologie Information-Communication Design ; Télécom ParisTech ; SES - Département Sciences Economiques et Sociales ; Univ. Paris-Saclay