

GAËLLE RICHER

My research interests span across information visualization, network visual analysis, and interactions. I am especially interested in the design of scalable techniques or systems that enable interactive exploration of large or complex datasets. In the past, I have worked with parallel coordinates, multiple coordinated views, multi-dimensional projection, graph drawing, progressive visualization.

RESEARCH & PROFESSIONAL EXPERIENCE

2019 – 2022	Postdoctoral Researcher , Inria / LISN, Aviz Advisor: Jean-Daniel-Fekete	GIF-SUR-YVETTE (91) / FRANCE
2017 – 2019	Teaching Assistant , IUT de Bordeaux	GRADIGNAN (33) / FRANCE
2015 – 2016	Researcher Assistant , Université de Bordeaux / LaBRI	TALENCE (33) / FRANCE
02–08/2015	Engineering Intern , FastConnect / Atos	ISSY-LES-MOULINEAUX (92) / FRANCE
06–08/2014	Research Intern , POSTECH Computer Graphics Lab., POSTECH	POHANG / SOUTH KOREA

EDUCATION

dec. 2019	Ph.D. in Computer Science , Université de Bordeaux / LaBRI "Addressing scaling challenges in interactive exploratory visualization with abstraction and spatial distortion". Advisors: David Auber & Romain Bourqui
oct. 2015	M.Sc in Computer Science , with honors, Bordeaux INP / ENSEIRB-Matméca Graduate Engineering School, Comp. Sci. Track: Courses covering all aspects of Computer Science, both in its theoretical and fundamental aspects. Specialization year in software engineering.

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES

- [J1] Ameya Patil, [Gaëlle Richer](#), Christopher Jermaine, Dominik Moritz, Jean-Daniel Fekete, "Studying Early Decision Making with Progressive Bar Charts". In: *IEEE Transactions on Visualization and Computer Graphics* (Jan. 2023). *To appear*.
- [J2] Natkamon Tovanich, Alexis Pister, [Gaëlle Richer](#), Paola Valdivia, Christophe Prieur, Jean-Daniel Fekete, Petra Isenberg, "VAST 2020 Contest Challenge: GraphMatchMaker: Visual Analytics for Graph Comparison and Matching". In: *IEEE Computer Graphics and Applications* (June 2021). DOI: [10.1109/mcg.2021.3091955](#).
- [J3] [Gaëlle Richer](#), Joris Sansen, Frédéric Lalanne, David Auber, Romain Bourqui, "HiePaCo: Scalable Hierarchical Exploration in Abstract Parallel Coordinates Under Budget Constraints". In: *Big Data Research* 17 (2019), pp. 1–17. ISSN: 2214-5796. DOI: [10.1016/j.bdr.2019.07.001](#).
- [J4] Joris Sansen, [Gaëlle Richer](#), Timothée Jourde, Frédéric Lalanne, David Auber, Romain Bourqui, "Visual Exploration of Large Multidimensional Data Using Parallel Coordinates on Big Data Infrastructure". In: *Informatics* 4.3 (2017), p. 21. DOI: [10.3390/informatics4030021](#).


PEER-REVIEWED CONFERENCES PAPERS

- [C1] [Gaëlle Richer](#), Romain Bourqui, David Auber, "CorFish: Coordinating Emphasis Across Multiple Views Using Spatial Distortion". In: *2019 IEEE Pacific Visualization Symposium (PacificVis)*. 2019, pp. 1–10. DOI: [10.1109/PacificVis.2019.00009](#).
- [C2] Antoine Hinge, [Gaëlle Richer](#), David Auber, "MuGDAD: Multilevel graph drawing algorithm in a distributed architecture". In: *Conference on Computer Graphics, Visualization and Computer Vision*. IADIS. 2017, p. 189.

PEER-REVIEWED WORKSHOPS PAPERS

- [W1] [Gaëlle Richer](#), Joris Sansen, Frédéric Lalanne, David Auber, Romain Bourqui, "Enabling Hierarchical Exploration for Large-Scale Multidimensional Data with Abstract Parallel Coordinates". In: *Proceedings of the Workshops of the EDBT/ICDT 2018 Joint Conference (EDBT/ICDT 2018)*. 2018, pp. 76–83.

OTHER: THESIS & CONTEST POSTER

- [O1] Natkamon Tovanich, Alexis Pister, [Gaëlle Richer](#), Paola Valdivia, Jean-Daniel Fekete, Christophe Prieur, Petra Isenberg, *GraphletMatchMaker: Visual Analytics Approaches to Graph Matching in Cybersecurity Communities*. IEEE Visual Analytics Science and Technology, VAST Challenge Poster.  . Oct. 2020.
- [O2] [Gaëlle Richer](#), “Addressing scaling challenges in interactive exploratory visualization with abstraction and spatial distortion”. *In French*. Thesis. Université de Bordeaux, Nov. 2019.

TEACHING & SUPERVISION

TEACHING EXPERIENCE

As a Teaching Assistant at Bordeaux University Institutes of Technology, Dept. Computer Science (2017 – 2019). Undergraduate courses (total 128h class):

- Introduction to Algorithms & Programming (15 students), class 2h/week, grading
- Introduction to Computer Networks (25 students), class 4h/week, grading

STUDENT SUPERVISION

- Undergraduate student intern, 6 months. Project: *Multiscale scatterplot matrix for large-scale data exploration* ;
- Graduate students senior project, 6 students, 1 month. Project: *Graph visualization tool for citation graphs*;
- PhD student intern, 3 months. Project: *Progressive bar charts*.

REFERENCES

- Jean-Daniel Fekete (postdoc supervisor) Researcher – Inria, Univ. Paris-Saclay
- David Auber (thesis supervisor) Professor – Univ. de Bordeaux
- Romain Bourqui (thesis supervisor) Assoc. Professor – Univ. de Bordeaux
- Olivier Gauwin (teaching) Assoc. Professor – Univ. de Bordeaux

COMMUNITY SERVICE

REVIEWING FOR JOURNALS, CONFERENCES/SYMPOSIA

	2019	2020	2021	2022
Big Data Research			1	
EuroVis (posters)	1			3 (3)
alt.chi			1	
IEEE VIS			2	2
IEEE TVCG			1	

VOLUNTEERING

- Organization of EDBT/ICDT 2017

SKILLS & ASSETS

Technical Programming & Scripting: C/C++, Java, python, Javascript, bash • Environment & Libraries: OpenGL, HTML/CSS, Vue.js, OpenMP, Hadoop, Spark, elasticsearch, pandas / Numpy • Software: versioning tools (git, svn), graphical editors (Inkscape, GIMP), document formatting (L^AT_EX, LibreOffice)

Language French (mother tongue) • English (full professional proficiency, TOEIC: 990/990, IELTS: 7.5/9 in Jan. 2014) • Spanish (elementary proficiency) • notions of Korean, Japanese and Mandarin.