

GAËLLE RICHER

FEBRUARY 9, 1993 • FRENCH

POSTDOCTORAL RESEARCHER • AVIZ, INRIA SACLAY

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My research focus is the design of novel visualization and interaction techniques. In particular, investigating scalable ways to interact with large-scale data through visual representations, with regards to both the representation and the processing aspects.

RESEARCH & PROFESSIONAL EXPERIENCE

2019 –	Postdoctoral Researcher , Inria Aviz (Inria), HCC (LISN) <ul style="list-style-type: none">- Progressive visualization, interactive exploration of networks and multidimensional data- Advisor: Jean-Daniel-Fekete- Funded by Inria (16 months)	GIF-SUR-YVETTE (91)
2017 – 19	Teaching Assistant , IUT de Bordeaux	GRADIGNAN (33)
2015 – 16	Researcher Assistant , Université de Bordeaux / LaBRI Improved and designed new interactions for a visualization tool for large multi-dimensional data. Also worked on performance improvement for an implementation of a scalable graph drawing algorithm.	TALENCE (33)
2015	Engineering Intern , FastConnect / Atos	ISSY-LES-MOULINEAUX (92)
2014	Research Intern , POSTECH Computer Graphics Lab. , POSTECH	POHANG, SOUTH KOREA

EDUCATION

2019	Ph.D. in Computer Science , Université de Bordeaux LaBRI <ul style="list-style-type: none">- Thesis subject: Interactive visualization on big data infrastructure- Advisors: David Auber & Romain Bourqui- Funded by a fellowship from the MESRI- Investigated interactions and representations for visualization of large-scale data across three projects: an interactive coordinated fisheye-like distortion for multiple and multi-form views, a visualization system using abstract parallel coordinates and a data-intensive platform, and a quantitative evaluation of geometry abstractions for density maps.
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

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: *Multi-scale scatterplot matrix for large-scale data* ;
- Graduate students senior project, 6 students, 1 month. Project: *Apache Spark-backed graph visualization tool for citation graphs*.

REFERENCES

- David Auber (thesis supervisor) Professor – Université de Bordeaux, auber@labri.fr
- Romain Bourqui (thesis supervisor) Assoc. Professor – Université de Bordeaux, bourqui@labri.fr
- Jean-Daniel Fekete Researcher – Inria, Université Paris-Saclay, jean-daniel.fekete@inria.fr
- Olivier Gauwin (teaching coordinator) Assoc. Professor – Université de Bordeaux, olivier.gauwin@labri.fr

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES

- [J1] 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](https://doi.org/10.1016/j.bdr.2019.07.001).
- [J2] 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](https://doi.org/10.3390/informatics4030021).

PEER-REVIEWED CONFERENCES

- [C1] 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](https://doi.org/10.1109/mcg.2021.3091955). URL: <https://hal.archives-ouvertes.fr/hal-03283200>.
- [C2] 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.2019.000009](https://doi.org/10.1109/PacificVis.2019.000009).
- [C3] 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.

OTHER: WORKSHOPS, CONTEST & THESIS

- [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, “Passage à l'échelle pour la visualisation interactive exploratoire de données : approches par abstraction et par déformation spatiale”. Thesis. Université de Bordeaux, Nov. 2019.
- [O3] 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)*. Mar. 2018, pp. 76–83.

COMMUNITY SERVICE

REVIEWING FOR JOURNALS, CONFERENCES/SYMPOSIA

- Big Data Research (1 paper)
- EuroVis (1 paper)
- alt.chi (1 paper)
- VIS (2 papers)

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 • Software: versioning tools (git, svn), graphical editors (Inkscape, GIMP), document formatting (L^ATEX, LibreOffice) • Operating Systems: Linux, MS Windows

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.