

Benjamin Bach, PhD, HDR¹

Senior Researcher / Directeur de Recherche

Team Bivwac, Inria, France

Associate Professor

University of Edinburgh, United Kingdom

200 avenue de la vieille Tour

33400 Talence

France

10 Crichton St.

EH8 9AB Edinburgh

U.K.

benjamin.bach@inria.fr

<https://benjbach.net>

Google Scholar profile: <https://scholar.google.com/citations?user=dXbz4FgAAAAJ&hl=en>

+33(0) 44.40.14.92

+44(0) 7452-999-335

Research

Benjamin is a Research Scientist at the Bivwac Group, Inria (France) and an Associate Professor in Design Informatics and Visualization at the School of Informatics, University of Edinburgh (UK) where he is co-leading the VisHub Group (<http://vishub.net>). His research focuses on making data visualization more effective and usable, which includes creating and evaluating interactive visualizations for complex datasets (e.g., networks and temporal data) and researching methods to effectively communicate and present data. Many of his projects involve interdisciplinary collaborations with researchers in neuroscience, history, archeology, law, and biology. In 2021, Benjamin was named [Significant New Researcher](#) by the IEEE VIS conference and in 2019, he was awarded the [Eurographics Young Researcher Award](#), highlighting his “broad and original contributions” and his “high rate of well-cited publications”. In 2014, Benjamin’s PhD dissertation was awarded a Best Thesis Honorable Mention by the IEEE VIS conference technical committee. His research on data comics and visual storytelling has also been awarded an internal Visual communication award by the Scottish Government.

Prior to joining the University of Edinburgh, Benjamin was a research assistant at the Visual Computing Group at Harvard University, the Immersive Analytics Lab at Monash University, a visiting researcher at Microsoft Research, Redmond, and the Integrated Brain Imaging Center at the University of Washington. Benjamin has over 70 publications and is regularly publishing at top-tier conferences and journals such as ACM Conference on Human Factors in Computing Systems (CHI) and IEEE Transactions on Visualization and Computer Graphics (TVCG). In 2024, Benjamin obtained his Habilitation à Diriger des Recherches (HDR) in France.

¹ HDR: habilitation à diriger des recherches / “habilitation to lead research”

Employment

Since October 2025	Senior Researcher / Directeur de Recherche Team Bivwac Inria, France
Since March 2024	Research Scientist Team Bivwac Inria, France
Since Apr 2022	Reader (Associate Professor) in Design Informatics and Visualisation School of Informatics Institute for Design Informatics University of Edinburgh, UK
Apr 2017-March 22	Lecturer (Assistant Professor, but tenured) in Design Informatics and Visualisation School of Informatics University of Edinburgh, UK
Oct 2016 - Mar 2017	Post-doctoral researcher Visual Computing Group Harvard University, Cambridge MA
Apr 2016 - Sep 2016	Post-doctoral researcher Monash University Caulfield, VIC, Australia
Feb 2015 - Oct 2015	Visiting Scientist Feb. - Nov. 2015 Integrated Brain Imaging Center (IBIC), University of Washington, and Microsoft Research, Seattle, WA, USA
Jun 2014 - Oct 2015	Post-doctoral researcher Interactive Network Visualization Microsoft Research - Inria Joint Center Saclay, France

Education

Dec 2024	HDR (Habilitation à diriger des recherches / habilitation to lead research) Université de Bordeaux
Jan 2011 - May 2014	Ph.D. Aviz Group, Inria Paris, France

Curriculum Vitae, Benjamin Bach, December 2025

- Sep 2007 - Aug 2008 Communication Design
Faculdade das Belas Artes
Universidade de Lisboa,
Lisbon, Portugal
- Nov 2009 - Apr 2010 Research Internship InSitu Group, Inria,
Paris, France
- Sep 2004 - Dec 2010 Diploma (BSc + MSc), Computer Science and Media
University of Technology Dresden,
Dresden, Germany

Grants Awarded

- 2024 Scotland Beyond Net Zero (BNZ, PI) The UK Co-Benefits Atlas: Open, Interactive, and Visual Presentation of Co-Benefits, Analysis for Achieving Net Zero across communities, business, and governments, £17,500
- 2024 Inria PhD scholarship (PI), €120,000
- 2024 UKRI Accelerated Knowledge Transfer (PI), EquipGlance: Interactive Dashboards for Real-time Equipment Monitoring £31,900.
- 2022 DDI (CoI): VisActivities: An Open Online Platform for Collecting, Browsing, and Discussing Activities for Visualization, Empowerment and Data Literacy. £9,870 (CoI)
- 2021 EPSRC (CoI): RAMP VIS: Making Visual Analytics an Integral Part of the Technological Infrastructure for Combating COVID-19, £427,000
- 2021 Scottish Funding Council (SCF): Data Visualization Online Course for Upskilling, £45,000 (PI)
- 2021 EPSRC (PI): Visoverly: Semi-automatic Data Tours to Support Data Exploration and Visualisation Literacy, £320,000
- 2020 Data Driven Innovation (DDI), Co-I: Outbreak Science and Policy: A Sentiment-based Mathematical Model Repository (SER) for disease emergency decision-making and long-term resilience to future One Health threats; £89,754.30
- 2020 Data Driven Innovation (DDI), Co-I: Data-driven personalised recovery care pathways after COVID-19, £85,814
- 2019 Scottish Funding Council (SCF): Data Visualization Online Course for Upskilling, £80,000 (PI)
- 2019 Global Challenges Research Fund (GCRF): Peaceteach Initiative: partnership for interactive mediation, £46,000
- 2018 EPSRC Capital Investment Grant: VisHub—A Collaborative Data Visualisation Space for Interdisciplinary Research, Teaching, and Public *Engagement*. £200,000 (Co-I)
- 2018 Edinburgh Futures Institute Research Grant: *Visualizing Inequalities* £5k (PI)
- 2017 IGS (School internal) PhD scholarship funding: ~£60,000 over 3 years (PI)
- 2017 Principal's Teaching Award: Towards Real-world teaching in Data

	Science, £15,000 (PI)
2014	Microsoft Research - Inria Joint Centre 18 month position
2010-2014	French Government Ph.D. grant: \$100.000, over 3 years

Career and Thesis Awards

2021	New Significant Researcher Award, IEEE VIS Conference
2019	Eurographics Young Researcher, IEEE/CGF Eurographics
2014	VGTC Best Ph.D. Thesis, Honorable Mention, IEEE VIS Conference

Publication Awards

2025	<u>Best Paper Honorable Mention, IEEE VIS Conference.</u> Visualization Badges: Communicating Design and Provenance through Graphical Labels Alongside Visualizations : Valentin Edelsbrunner, Jinrui Wang, Alexis Pister, Tomas Vancisin, Min Chen, Benjamin Bach. IEEE TVCG (2026)
2022	<u>Best Paper Honorable Mention, IEEE VIS Conference.</u> Dashboard Design Patterns : Benjamin Bach, Euan Freeman, Alfie Abduhl-Rahman, Cagatay Turkay, Saiful Khan, Yulei Fan, Min Chen . IEEE TVCG. (2023).
2022	<u>Best Paper Honorable Mention, IEEE VIS Conference.</u> Exploring Interactions with Printed Data Visualizations in Augmented Reality : Wai Tong, Zhutian Chen, Meng Xia, Leo Yu-Ho Lo, Linping Yuan, Benjamin Bach, Huamin Qu. IEEE TVCG. (2023)
2021	<u>Best Paper Honorable Mention (top 5%) ACM Conference on Human Computer Interaction (CHI)</u> Sketchnote Components, Design Space Dimensions, and Strategies for Effective Visual Note Taking : Rebecca Zheng, Marina Fernández Camporro, Hugo Romat, Nathalie Henry Riche, Benjamin Bach, Fanny Chevalier, Ken Hinckley, Nicolai Marquardt. ACM Conference on Human Factors in Computing Systems (CHI). (2021).
2021	<u>Best Paper Honorable Mention, IEEE VIS Conference</u> A Generic Framework and Library for Exploration of Small Multiples through Interactive Piling : Fritz Lekschas, Xinyi Zhou, Wei Chen, Nils Gehlenborg, Benjamin Bach, and Hanspeter Pfister. IEEE Transactions on Visualization and Computer Graphics (TVCG) 2021 (IEEE VIS, 2020). (2021).
2019	<u>Best Poster IEEE VIS Conference</u> Exploring cheat sheets for data visualization techniques : Zezhong Wang, Louvisa Sundin, Dave Murray-Rust, Benjamin Bach
2018	<u>Best Poster IEEE BioVis Conference</u> Pattern-Driven Navigation in 2D Multiscale Visual Spaces with Scalable Insets : Fritz Lekschas, Michael Behrisch, Benjamin Bach, Peter Kerpedjiev, Nils Gehlenborg, Hanspeter Pfister
2013	<u>Best Poster, IEEE VIS Conference</u> Visualizing Dense Dynamic Networks with Matrix Cubes : Benjamin Bach, Emmanuel Pietriga, Jean-Daniel Fekete
2013	<u>Best Paper (top 1%), ACM Conference on Human Computer Interaction (CHI)</u>

Professional Activities (selection)

- Information+ conference co-chair (2023)
- ACM CHI Paper Associate Chair (2018, 2019, 2021, 2022, 2023)
- ACM CHI Late Breaking Work Associate Chair (2017)
- ACM CHI Work-in-Progress Program Committee (2015)
- IEEE VIS Program Committee (since 2018)
- IEEE VIS Organizing Committee (since 2019)
- GraphDrawing Program Committee
- ACM ISS Workshop Chair (2020)
- TransImage Conference: Conference Co-chair 2018
- ACM Creativity and Cognition; Program Chair (2021, 2022)

Scientific Workshops

1. 2024 IEEE VIS: Workshop on Visualization Education, Literacy, and Activities. Mandy Keck, Samuel Huron, Georgia Panagiotidou, Christina Stoiber, Fateme Rajabiyazdi, Charles Perin, Jonathan C. Roberts, Benjamin Bach, IEEE VIS 2024, St. Pete Beach, Florida
2. 2024 IEEE VIS: Visualization for Climate Action and Sustainability. Benjamin Bach, Fanny Chevalier, Helen-Nicole Kostis, Mark SubbaRao, Yvonne Jansen, Robert Soden, IEEE VIS 2024, St. Pete Beach, Florida
3. 2023 IEEE VIS: Workshop on Visualization Education, Literacy, and Activities. Mandy Keck, Samuel Huron, Georgia Panagiotidou, Christina Stoiber, Fateme Rajabiyazdi, Charles Perin, Jonathan C. Roberts, Benjamin Bach, IEEE VIS 2023, Melbourne, Australia
4. 2022 IEEE VIS: 4th Workshop on the Creation, Curation, Critique and Conditioning of Principles and Guidelines in Visualization. Benjamin Bach, Alexandra Diehl, Alfie Abdul-Rahman.
5. 2021 IEEE VIS: 2nd IEEE VIS Workshop on Data Vis Activities to Facilitate Learning, Reflecting, Discussing, and Designing, Samuel Huron, Benjamin Bach, Uta Hinrichs, Sheelagh Carpendale; New Orleans (virtual)
6. 2020 IEEE VIS: Workshop on Data Vis Activities to Facilitate Learning, Reflecting, Discussing, and Designing, Samuel Huron, Benjamin Bach, Uta Hinrichs, Sheelagh Carpendale; Utah (virtual)
7. 2020 IEEE VIS: 3rd Workshop on the Creation, Curation, Critique and Conditioning of Principles and Guidelines in Visualization Alfie Abdul-Rahman, Alexandra Diehl, Benjamin Bach; Utah (virtual)
8. 2020 ACM CHI: Envisioning Future Productivity for Immersive Analytics: Barrett Ens, Benjamin Bach, Maxime Cordeil, Ulrich Engelke, Marcos Serrano, Wesley Willett; Hawaii (virtual)
9. 2019 ACM CHI: Interaction Design & Prototyping for Immersive Analytics: Benjamin Bach, Maxime Cordeil, Ulrich Engelke, Barrett Ens, Marcos Serrano, Wesley Willett; Glasgow
10. 2018 University of Oxford: Interactive Visualization of Dynamic Multivariate Networks with the Vistorian: Benjamin Bach, Workshop at The Connected Past; Oxford
11. 2018 IEEE VIS: VisGuides: 2nd Workshop on the Creation, Curation, Critique and Conditioning of Principles and Guidelines in Visualization: Alexandra Diehl, Benjamin Bach, Alfie Abdul-Rahman; Berlin

12. 2018 IEEE VIS: Storyboards for Science: Combining the Visual and Verbal to Create Engaging Communication: David Rogers, Francesca Samsel, Sean Cunningham, Benjamin Bach; Berlin
13. 2018 EHSS Paris: Interactive Visualization of Dynamic Multivariate Networks with the Vistorian: Benjamin Bach, Jean-Daniel Fekete, Nicole Dufournaud, Open workshop, EHSS, Paris
14. 2018 CAA: Interactive Visualization of Dynamic Multivariate Networks with the Vistorian: Benjamin Bach, University of Tübingen
15. 2017 IEEE VIS: Immersive Analytics: Exploring Future Visualization and Interaction Technologies for Data Analytics: Benjamin Bach, Maxime Cordeil, Tim Dwyer, Bongshin Lee, Bahador Saket, Alex Endert, Christopher Collins, Sheelagh Carpendale; Phoenix, AZ
16. 2017 IEEE VIS: Discovery Jam: David Rogers, Dan Keefe, Francesca Samsel, Miriah Meyer, Cecilia Aragon, Benjamin Bach; Phoenix, AZ
17. 2017 University of Bournemouth: Interactive Visualization of Dynamic Multivariate Networks with the Vistorian: Benjamin Bach, Workshop at The Connected Past; Bournemouth
18. 2016 ACM ISS: Immersive Analytics: Exploring Future Interaction and Visualization Technologies for Data Analytics: B Bach, R Dachzelt, S Carpendale, T Dwyer, C Collins, B Lee. ACM on Interactive Surfaces and Spaces, Niagara Falls, ON

Invited Talks

(Not including conference presentations)

1. July 2023: Sifting Through the Haystack: From Data to Stories with Visualization, Keynote GrapHNR Conference, Mainz
2. June 2023: Show me the Data: From Data to Insights and Stories with Visualizations, HEIBRIDS Spring School, Berlin
3. June 2023: Designing for Understanding: How to Empower People to Create+Use Visualizations?, Keynote for Journe de la Visu, Paris-Saclay
4. June 2023: Why, What, How: Data Visualization for Exploration and Communication, Annual Conference of the Centre for Statistics, Edinburgh
5. January 2023: Designing for Communication, Inria Bordeaux
6. November 2022: Interacting with Data, Visualizing Information: How to Use Data Visualization for Effective Exploration and Explanation, ETH AI Center, Zurich.
7. November 2022: Thinking Visualization / Designing for Knowledge, University of Zurich (UZH), Zurich.
8. June 2022: Open Your Eyes, Finding Shapes for Your Data. Summer Institute in Computational Social Sciences, University of Edinburgh
9. June 2022: The Role of Visualization in Exploring and Communicating Text. Text & Data Analysis Summer School, University of Edinburgh
10. Feb 2022: Data Comics for Data-Driven Storytelling, University of Magdeburg, Germany
11. Jan 2022: Tools, Users, and Methods in Data Visualizations, Potioc Team, Inria, France
12. Dec 2021: Data Comics for Data-Driven Storytelling , Westminster City Council, UK
13. Oct 2021: Data Comics for Data-Driven Storytelling. Guest Lecture. Kings College London, UK
14. Sep 2021: Communicating Research through Data Comics, Royal Statistical Society Conference 2021.
15. Aug 2021: Visualization Empowerment, FH Potsdam, Information+Visualisation Talk series, Germany
16. July 2021: Data Visualization for Exploration, Explanation, and Participation, Turing RSE Summer school, UK

17. July 2021: Data-Driven Storytelling with Data Comics, [PKUVIS Visualization Summer school, China](#)
18. Apr 2021: Data Comics for Data-driven storytelling, [DataViz Meetup, Toulouse, France](#)
19. Apr 2021: Visualization Empowerment, [iLab University of Calgary, AB](#)
20. Jan 2021: The Immersive Canvas: Information Visualization in Immersive Environments, [Graphic Hunters, Netherlands](#)
21. Jan 2021: Visualization Empowerment, [Open Lab, Newcastle University, UK](#).
22. Dec 2020: The Immersive Canvas: Information Visualization in Immersive Environments, Keynote to Workshop ImAna at [IEEE AIVR](#)
23. Nov 2020: Data Comics, [Data Stories Symposium, Kings College London, UK](#)
24. Oct 2020: Data Comics Guest Lecture, [Kings College London, UK](#)
25. Jun 2020: Visually Communicating Data, Insights, and Ideas, [Neighbors Workshop, Glasgow, UK](#)
26. Apr 2020: Data Visualization for Exploration and Explanation in Immersive Environments, [Pufferfish Corporation, Edinburgh, UK](#)
27. Jan 2020: DataVis in a Nutshell: [Satellite Workshop, University of Edinburgh, UK](#)
28. Jan 2020: Dealing Vis Data: Keynote to Dealing with Data conference, [University of Edinburgh, UK](#)
29. July 2019: Data Visualization for Exploration and Storytelling, [Aberdeen Data Vis Meetup, UK](#)
30. June 2019: Edinburgh Futures Seminar: Visualizing Peace and Conflicts, [University of Edinburgh, UK](#)
31. May 2019: Data visualization for exploration, explanation and beyond, [Kings College, London, UK](#)
32. Dec 2018: Visualizing Space-Time Cubes in AR; [Shonan Seminar to Immersive Analytics, Tokio, Japan](#)
33. Oct 2018: Tuto@Mate (online webinar): Interactive Visualization for Dynamic, Multivariate, and Geographic Networks, [France \(virtual\)](#)
34. Sep 2018: Data Comics for Data-Driven Storytelling, [University of Tilburg, Netherlands](#)
35. Sep 2018: Perspectives on Data Visualization, [Design Informatics Seminar Series, University of Edinburgh, UK](#)
36. May 2018: Keynote for Workshop on Big Data Analytics and Business Applications: Interaction Literacy for Data Visualization; [AVI Conference, Casteglione della Pescaia, IT](#)
37. May 2018: Data Visualization for Exploration, Explanation, and Engagement; [Tesco Bank, UK](#)
38. May 2018: Drawing into the AR-Canvas: Designing Embedded Visualizations for Augmented Reality; [OpenVis Conference, Paris, France](#)
39. Mar 2018: Tools for Data Visualization, [DataTech Fest Edinburgh, UK](#)
40. Mar 2018: Visualization for Interactive Data Exploration, [Alan Turing Institute, London, UK](#)
41. Feb 2018: Seven Myths about Data Visualization, Controversies in the Data Society Talk Series, [University of Edinburgh, UK](#)
42. Jun 2017: Data Through the Visual Lens: Data Science Meeting, [University of Edinburgh, UK](#)
43. May 2017: Data Visualization for Exploration, Explanation and Beyond, [University of Edinburgh, UK](#)
44. Sept 2016: Interacting with Data, [Harvard University, MA](#)

Teaching

Past:

- Data Science for Design (20 Credits, 2017-2023)
- Data Visualisation for Professionals (10 Credits, since 2020), online course
- Data Visualisation (10/10Cts)
- The Human Factor, University of Edinburgh
- Sep 2017: Data Science for Designers, University of Edinburgh

Curriculum Vitae, Benjamin Bach, December 2025

- Dec 2014: Interactive Information Visualization, University Paris-Sud
- Fall 2007: Didactics and Media Psychology (TA)
- Fall 2006: Didactics and Media Psychology (TA)

Supervision

PhD:

1. Magdalena Boucher (since 2022, 2nd supervisor)
2. Rea Michalopoulou (since 2022, 2nd supervisor)
3. Sarah Dunn (since 2023, 1st supervisor)
4. Jinrui Wang (since 2023, 2nd supervisor)
5. Valentin Edelsbrunner (since 2024, 1st supervisor)

Graduated PhD

1. Sarah Schöttler (2021-2025, 1st supervisor)
2. Tobias Kauer (2019-2024, 1st supervisor)
3. Mashael Hamad AlKadi (2019-2024, 1st supervisor)
4. Ryan Bowler (2019-2024, 1st supervisor)
5. Lucy Havens (2020-2024, 2nd supervisor)
6. Zezhong Wang (2019-2022, 1st supervisor)
7. Kun Ting Chen (2019-2022, 2nd supervisor)

PhD Examination

1. **Amira Chalbi**: Understanding and designing animations in the user interfaces, Inria, 2018
2. **Catarina Maçãs**: Time-Series Visualization: Highlighting Patterns and Deviations. Universidade de Coimbra, PT. July 2021
3. **Evangelos Kanonides**: Use of Similarity Metrics Aiming to Identify Groupings of Entities with Clinical and Biological Significance. University of Edinburgh, UK, 2021
4. **Marius Varga**: Immersive Multidimensional Data Visualisation using Geon Based Objects, University of Plymouth, 2022
5. **Tao Li**, Creating Comics from Automatic Summarization of Sports Stories, University of Birmingham, 2023
6. **Ahmed Patel**, Imperial College London, 2023
7. **Osman Akbulut**, University of Newcastle, 2023
8. **Stanislav Pozdniakov**, Monash University, 2023
9. **Manula Garreton**, University of Santiago de Chile, 2023

MSc by Research

- Vebjørn Halvfjerdvik (2019-2021, graduated, 2nd supervisor)
- Qiuyuan Ren (2017-2018, graduated, 1st supervisor)

Masters dissertations (39, since 2017)

- 2025: Gwennen Drouillet, Lea Andrusz
- 2024: Feni Faizah, Iria Chen

Curriculum Vitae, Benjamin Bach, December 2025

- 2022: Yun Zhao, Perseas, Jingyu Chu, Chengcong, Xinyan Chai, Jinman Xing, Qiaoyue Yang, Xiaoyu Han, Tianhao Jin, Yujia Liu, Dake Wang, Jinrui Wang, Rui Wu, Shiqi Yu, Tom Steward
- 2021: Tashfeen Ahmed (MA), Luna Hu, Boao Huang, Ziyang Lin, Yeru Lin, Yanan Liu, Tamara Lottering, Sarah Olson, Jiangnan Xu, Minjia Zhao, Shenshen Ji, Chen Chen, Yu Zhao (MFA), Yuhao Zhang.
- 2020: Jin Xiao, Bibo Tian, Yu Zhao, Li Haonan, Xue Feng, Kehan Jiao, Vaida Plankyte, Dandi Huang, Nistha Kumar.
- 2019: Sarah Schoettler (MSc), Xinyu Du (MSc), Junxian Meng (MSc), Qinru Zhu (MSc), Yixin Liu (MA),
- 2018: Finn Ickler (MSc), Xudong Jiang (MSc), Ilyas Zholdasbayev (MSc), Yiwei Sun (MSc), Yan Wu (MSc), Iqbal Rosiadi (MSc),
- 2017: Edson Alcala (MSc), Parul Sharma (MSc), Ruobing Hao (MA), Xian Tang (MSc), Zezhong Wang (MSc).

BHons dissertations

- James O'Donnell, Charles Shraples, Hirsh Agarwal, Alexander Olson, Veronika Dimitrova

Reviewing

- ACM CHI Papers (since 2013)
- ACM CHI Late Breaking Work (2016, 2021)
- ACM Interactive, Mobile, Wearable and Ubiquitous Technologies (2021)
- ACM Interact (2019)
- ACM UIST (2019, 2021)
- Computer and Graphics (2021)
- Computer Graphics and Applications (*since* 2016)
- Creativity & Cognition (2021, 2022)
- Graph Drawing (2018, 2019, 2020, 2021)
- IEEE/CGF EuroVis (2012, *since* 2014)
- IEEE InfoVis/Vast: (*since* 2012)
- IEEE PacificVis (2019)
- IEEE VR (2019, 2020, 2021, 2020)
- ISMAR (2021)
- Language Resources and Evaluation (2020)
- Multimedia Tools and Applications, Springer (2021)
- Transactions in Computer Graphics and Visualization (*since* 2011)
- Workshop Vis4DH (IEEE VIS) (2020)
- Workshop on Machine Learning and Visualization (EuroVis) 2020, 2021
- Workshop MLVis (IEEE EuroVis) (2020, 2021)
- VIS Arts Program (2019)

Evaluation of Research projects

- 2021, 2024: Engineering and Physical Sciences Research Council (EPSRC) (UK): 2
- 2019: [Natural Sciences and Engineering Research Council of Canada](#) (NSERC/CRSNG),(Canada): 1

- 2019, 2023, 2024: FWF-Austrian Science Fund (Austria): 3

Publications (ordered by recency, for most recent list, see [Google Scholar](#))

1. [Does This Have a Particular Meaning? Interactive Pattern Explanation for Network Visualizations](#): Xinhuan Shu, Alexis Pister, Junxiu Tang, Fanny Chevalier, and Benjamin Bach. IEEE Transactions on Visualization and Computer Graphics (TVCG, IEEE VIS 2024). (2024).
1. [Practices and Strategies in Responsive Thematic Map Design: A Report from Design Workshops with Experts](#): Sarah Schöttler, Uta Hinrichs, and Benjamin Bach. IEEE Transactions on Visualization and Computer Graphics (TVCG, IEEE VIS 2024). (2024). [\[WEB\]](#)
2. [Discursive Patinas: Anchoring Discussions in Data Visualizations](#): Tobias Kauer, Derya Akbaba, Marian Dörk, Benjamin Bach. IEEE Transactions on Visualization and Computer Graphics. (2024).
3. [Challenges and Opportunities in Data Visualization Education: A Call to Action](#): Benjamin Bach, Mandy Keck, Fateme Rajabiyazdi, Tatiana Losev, Isabel Meirelles, Jason Dykes, Robert S. Laramée, Mashael AlKadi, Christina Stoiber, Samuel Huron, Charles Perin, Luiz Morais, Wolfgang Aigner, Doris Kosminsky, Magdalena Boucher, Søren Knudsen, Areti Manataki, Jan Aerts, Uta Hinrichs, Jonathan C. Roberts, Sheelagh Carpendale. IEEE VIS 2023, accepted for publication
4. [NetworkNarratives: Data Tours for Visual Network Exploration and Analysis](#): Wenchao Li, Sarah Schöttler, James Scott-Brown, Yun Wang, Siming Chen, Huamin Qu, Benjamin Bach. ACM Conference on Human Factors in Computing Systems (CHI). (2023).
5. [Understanding Barriers to Network Exploration with Visualization: A Report from the Trenches](#): Mashael AlKadi, James Scott-Brown, Vanessa Serrano, Jean-Daniel Fekete, Catherine Plaisant, Uta Hinrichs, Benjamin Bach. IEEE TVCG. (2023).
6. [Dashboard Design Patterns](#): Benjamin Bach, Euan Freeman, Alfie Abdul-Rahman, Cagatay Turkay, Saiful Khan, Yulei Fan, Min Chen. IEEE TVCG. (2023).
7. [Exploring Interactions with Printed Data Visualizations in Augmented Reality](#): Wai Tong, Zhutian Chen, Meng Xia, Leo Yu-Ho Lo, Linping Yuan, Benjamin Bach, Huamin Qu. IEEE TVCG. (2023).
8. [Narrative medical visualization to communicate disease data](#): Monique Meuschke, Laura A. Garrison, Noeska N.Smit, Benjamin Bach, Sarah Mittenentzwei, Veronika Weiß, Stefan Bruckner, Kai Lawonn, Bernhard Preim. Computer & Graphics. (2022).
9. [RAMPVIS: Answering the Challenges of Building Visualisation Capabilities for Large-scale Emergency Responses](#): Chen, M, A. Abdul-Rahman, D. Archambault, J. Dykes, P. D. Ritsose, A. Slingsby, T. Torsney-Weir, C. Turkay, B. Bach, et al.. Epidemics. (2022).
10. [Visualization for Epidemiological Modelling: Challenges, Solutions, Reflections & Recommendation](#): Jason Dykes, Alfie Abdul-Rahman, Daniel Archambault, Benjamin Bach, Rita Borgo, Min Chen, et al. Phil. Trans. R. Soc. A. (special issue on 'Technical challenges of modelling real-life epidemics and examples of overcoming these'). (2022).
11. [Exploring Uncertainty in Digital Scheduling, and The Wider Implications of Unrepresented Temporalities in HCI](#): Ryan Bowler, Benjamin Bach, Larissa Pschetz. ACM Conference on Human Factors in Computing Systems (CHI). (2022).
12. [GAN'SDA Wrap: Geographic And Network Structured Data on surfaces that Wrap around](#): Kun-Ting Chen, Tim Dwyer, Yalong Yang, Benjamin Bach, Kim Marriott. ACM Conference on Human Factors in Computing Systems (CHI). (2022).
13. [Rotate or Wrap? Interactive Visualisations of Cyclical Data on Cylindrical or Toroidal Topologies](#): Kun-Ting Chen, Tim Dwyer, Benjamin Bach, Kim Marriott; IEEE Transactions on Visualization and Computer Graphics (TVCG, IEEE VIS, 2021)", 2022

14. [Designing an interactive real-time web-mapped dashboard to visualise conflict ceasefires data over COVID-19 infection rates: Facilities and the way ahead](#); Devanjan Bhattacharya, Sanja Badanjak, Christine Bell, Fiona Knaussel, Laura Wise, John Allison, Benjamin Bach, IEEE Global Humanitarian Technology. 2022
15. [Ways of Seeing: Peace Process Data-Viz as Research Practice](#); Christine Bell, Benjamin Bach, Tobias Kauer, Convergence. 2022, in print
16. [Visual Arrangements of Bar Charts Influence Comparisons in Viewer Takeaways](#). Cindy Xiong, Vidya Setlur, Benjamin Bach, Kylie Lin, Eunye Koh, and Steven Franconeri. IEEE Transactions on Visualization and Computer Graphics (TVCG, IEEE VIS, 2021), 2022,
17. [Propagating Visual Designs to Numerous Plots and Dashboards](#); Saiful Khan, Phong H. Nguyen, Alfie Abdul-Rahman, Benjamin Bach, Min Chen, Euan Freeman, Cagatay Turkey. IEEE Transactions on Visualization and Computer Graphics (TVCG, IEEE VIS, 2021). (2022).
18. [Interactive Data Comics](#); Zezhong Wang, Hugo Romat, Fanny Chevalier, Nathalie Henry Riche, Dave Murray-Rust, Benjamin Bach. IEEE Transactions on Visualization and Computer Graphics (TVCG, IEEE VIS, 2021). (2022). [\[WEB\]](#) [\[VIDEO\]](#)
19. [Visualizing and Interacting with Geospatial Networks: A Survey and Design Space](#); Sarah Schöttler, Yalong Yang, Hanspeter Pfister, Benjamin Bach. EG/IEEE Computer Graphics Forum. (2021). [\[WEB\]](#)
20. [Grand Challenges in Immersive Analytics](#); Barrett Ens, Benjamin Bach, Maxime Cordeil, Ulrich Engelke, Marcos Serrano, Wesley Willett, Arnaud Prouzeau, Christoph Anthes, Wolfgang Büschel, Cody Dunne, Tim Dwyer, Jens Grubert, Jason H. Haga, Nurit Kirshenbaum, Dylan Kobayashi, Tica Lin, Monsurat Olaosebikan, Fabian Pointecker, David Saffo, Nazmus Saquib, Dieter Schmalstieg, Danielle Albers Szafir, Matthew Whitlock, Yalong Yang. ACM Conference on Human Factors in Computing Systems (CHI). (2021).
21. [Sketchnote Components, Design Space Dimensions, and Strategies for Effective Visual Note Taking](#); Rebecca Zheng, Marina Fernández Camporro, Hugo Romat, Nathalie Henry Riche, Benjamin Bach, Fanny Chevalier, Ken Hinckley, Nicolai Marquardt. ACM Conference on Human Factors in Computing Systems (CHI). (2021). [\[VIDEO\]](#)
22. [It's a Wrap: Toroidal Wrapping of Network Visualisations Supports Cluster Understanding](#); Kun-Ting Chen, Tim Dwyer, Benjamin Bach, Kim Marriott. ACM Conference on Human Factors in Computing Systems (CHI). (2021).
23. [The Public Life of Data: Investigating Reactions to Visualizations on Reddit](#); Tobias Kauer, Arran Ridley, Marian Dörk, Benjamin Bach. ACM Conference on Human Factors in Computing Systems (CHI). (2021)/
24. [Data Comics for Reporting Controlled User Studies in Human-Computer Interaction](#); Zezhong Wang, Jacob Ritchie, Jingtao Zhou, Fanny Chevalier, Benjamin Bach. IEEE Transactions on Visualization and Computer Graphics (TVCG) 2021 (IEEE VIS, 2020). (2021). [\[WEB\]](#) [\[VIDEO\]](#)
25. [A Generic Framework and Library for Exploration of Small Multiples through Interactive Piling](#); Fritz Lekschas, Xinyi Zhou, Wei Chen, Nils Gehlenborg, Benjamin Bach, and Hanspeter Pfister. IEEE Transactions on Visualization and Computer Graphics (TVCG) 2021 (IEEE VIS, 2020). (2021). [\[WEB\]](#)
26. [What Makes a Data-GIF Understandable?](#); Xinhuan Shu, Aoyu Wu, Junxiu Tang, Benjamin Bach, Yingcai Wu, and Huamin Qu. IEEE Transactions on Visualization and Computer Graphics (TVCG) 2021 (IEEE VIS, 2020). (2021).
27. [The VisTools Marketplace: An Activity to Understand the Landscape of Visualisation Tools](#); Arran Ridley, Sarah Schöttler, Aba-Sah Dadzie, Benjamin Bach. Workshop on Vis Activities @ IEEE VIS conference. (2020). [\[WEB\]](#)
28. [Interactive Time-Series of Measures for Exploring Dynamic Networks](#); Liwenhan Xie, James O'Donnel, Benjamin Bach, Jean-Daniel Fekete. International Conference on Advances Interfaces (AVI). (2020).
29. [Visual Encodings for Networks with Multiple Edge Types](#); Athanasios Vogogias, Daniel Archambault, Benjamin Bach, Jessie Kennedy. International Conference on Advances Interfaces (AVI). (2020).
30. [Cheat Sheets for Data Visualization Techniques](#); Zezhong Wang, Lovisa Sundin, Dave Murray-Rust, Benjamin Bach. ACM Conference on Human Factors in Computing Systems (CHI). (2020). [\[VIDEO\]](#)

31. [Embodied Axes: Tangible, Actuated Interaction for 3D Augmented Reality Data Spaces](#): Maxime Cordeil, Benjamin Bach, Andrew Cunningham, Bastian Montoya, Ross T. Smith, Bruce H. Thomas, Tim Dwyer. ACM Conference on Human Factors in Computing Systems (CHI). (2020).
32. [DoughNets: Visualising Networks Using Torus Wrapping](#): Kun-Ting Chen, Tim Dwyer, Kim Marriott, Benjamin Bach. ACM Conference on Human Factors in Computing Systems (CHI). (2020).
33. [Augmenting Static Visualizations with PapARVis Designer](#): Zhutian Chen, Wai Tong, Qianwen Wang, Benjamin Bach, Huamin Qu. ACM Conference on Human Factors in Computing Systems (CHI). (2020).
34. [Pattern-Driven Navigation in 2D Multiscale Visualizations with Scalable Insets](#): Fritz Lekschas, Michael Behrisch, Benjamin Bach, Peter Kerpedjiev, Nils Gehlenborg, Hanspeter Pfister. IEEE Transactions on Visualization and Computer Graphics (TVCG) 2020 (IEEE VIS, 2019)). (2020).
35. [IATK: An Immersive Analytics Toolkit](#): Maxime Cordeil, Andrew Cunningham, Benjamin Bach, Christophe Hurter, Bruce H. Thomas, Kim Marriott, Tim Dwyer. IEEE VR (2019). (2019).
36. [PaxVis: Visualizing Peace Agreements](#): Lucy Havens, Mengting Bao, Larissa Pschetz, Benjamin Bach, Christine Bell. ACM Conference on Human Factors in Computing Systems (CHI). (2019).
37. [Comparing Effectiveness and Engagement of Data Comics and Infographics](#): Zezhong Wang, Shunming Wang, Matteo Farinella, Dave Murray-Rust, Nathalie Henry Riche. ACM Conference on Human Factors in Computing Systems (CHI). (2019).
38. [DataToon: Drawing Data Comics About Dynamic Networks with Pen + Touch Interaction](#): Nam Wook Kim, Nathalie Henry Riche, Benjamin Bach, Guanpeng Xu, Matthew Brehmer, Ken Hinckley, Michel Pahud, Haijun Xia, Michael J. McGuffin, Hanspeter Pfister. ACM Conference on Human Factors in Computing Systems (CHI). (2019).
39. [Teaching Data Visualization and Storytelling with Data Comic Workshops](#): Zezhong Wang, Harvey Dingwal, Benjamin Bach. ACM Conference on Human Factors in Computing Systems (CHI), Extended Abstracts. (2019).
40. [DXR: A Toolkit for Building Immersive Data Visualizations](#): Sicat, Ronell, Jiabao Li, JunYoung Choi, Maxime Cordeil, Won-Ki Jeong, Benjamin Bach, and Hanspeter Pfister. IEEE transactions on visualization and computer graphics (2019) (IEEE VIS 2018). (2019).
41. [Multisensory immersive analytics](#): McCormack, Jon, Jonathan C. Roberts, Benjamin Bach, Carla Dal Sasso Freitas, Takayuki Itoh, Christophe Hurter, and Kim Marriott. In Immersive Analytics, pp. 57-94. Springer, Cham. (2018).
42. [Information Visualization Evaluation Using Crowdsourcing](#): Borgo, Rita, L. Micallef, B. Bach, F. McGee, and B. Lee. In Computer Graphics Forum, vol. 37, no. 3, pp. 573-595. (2018).
43. [Ways of Visualizing Data on Curves](#): Bach, Benjamin, Charles Perin, Qiuyuan Ren, and Pierre Dragicevic. In TransImage 2018-5th Biennial Transdisciplinary Imaging Conference, pp. 1-14. (2018).
44. [Narrative Design Patterns for Data-Driven Storytelling](#): Bach, Benjamin, Moritz Stefaner, Jeremy Boy, Steven Drucker, Lyn Bartram, Jo Wood, Paolo Ciuccarelli, Yuri Engelhardt, Ulrike Koeppen, and Barbara Tversky. In Data-Driven Storytelling, pp. 125-152. AK Peters/CRC Press. (2018). [\[WEB\]](#)
45. [VisGuides: A forum for discussing visualization guidelines](#): Diehl, Alexandra, Alfie Abdul-Rahman, Mennatallah El-Assady, Benjamin Bach, Daniel Keim, and Min Chen. IEEE/CGD EuroVis Shortpapers. (2018).
46. [Towards Open-World Scenarios: Teaching the Social Side of Data Science](#): Corneli, Joseph, Dave Murray-Rust, and Benjamin Bach. In Proceedings of Cybernetic Serendipity Reimagined Symposium, Proc. Annual Convention of the Society for the Study of Artificial Intelligence and Simulation of Behaviour (AISB). (2018)
47. [Picturing Science: Design Patterns in Graphical Abstracts](#): Hullman, Jessica, and Benjamin Bach. International Conference on Theory and Application of Diagrams. Springer, Cham. (2018).
48. [Animated Edge Textures in Node-Link Diagrams: a Design Space and Initial Evaluation](#): Romat, Hugo, Caroline Appert, Benjamin Bach, Nathalie Henry-Riche, and Emmanuel Pietriga. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, p. 187. ACM. (2018).

49. [Design patterns for data comics](#): Bach, Benjamin, Zezhong Wang, Matteo Farinella, Dave Murray-Rust, and Nathalie Henry Riche. Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems, p. 38. ACM. (2018).
50. [Visualizing Nonlinear Narratives with Story Curves](#): Kim, Nam Wook, Benjamin Bach, Hyejin Im, Sasha Schriber, Markus Gross, and Hanspeter Pfister. IEEE Transactions on Visualization & Computer Graphics. (2018).
51. [The Hologram in My Hand: How Effective is Interactive Exploration of 3D Visualizations in Immersive Tangible Augmented Reality?](#): Bach, Benjamin, Ronell Sicat, Johanna Beyer, Maxime Cordeil, and Hanspeter Pfister. IEEE Transactions on Visualization & Computer Graphics. (2018).
52. [HiPiler: visual exploration of large genome interaction matrices with interactive small multiples](#): Lekschas, Fritz, Benjamin Bach, Peter Kerpedjiev, Nils Gehlenborg, and Hanspeter Pfister. IEEE transactions on visualization and computer graphics 24, no. 1 (2018): 522-531. (2018)
53. [Alignment Cubes: Towards Interactive Visual Exploration and Evaluation of Multiple Ontology Alignments](#): Valentina Ivanova, Benjamin Bach, Emmanuel Pietriga, Pierre Lambrix. International Semantic Web Conference, 400-417. (2017).
54. [Understanding the Use of The Vistorian: Complementing Logs with Context Mini-Questionnaires](#): Verena S. Molinero, Benjamin Bach, Catherine Plaisant, Nicole Dufournaud, Jean-Daniel Fekete. Workshop on Visualization for the Digital Humanities IEEE VIS. (2017).
55. [Crowdsourcing for Information Visualization: Promises and Pitfalls](#): Rita Borgo, Bongshin Lee, Benjamin Bach, Sara Fabrikant, Radu Jianu, Andreas Kerren, Stephen Kobourov, Fintan McGee, Luana Micallef, Tatiana von Landesberger, Katrin Ballweg, Stephan Diehl, Paolo Simonetto, Michelle Zhou. Evaluation in the Crowd. Crowdsourcing and Human-Centered Experiments, 96-138. (2017).
56. [Drawing into the AR-CANVAS: Designing Embedded Visualizations for Augmented Reality](#): Benjamin Bach, Ronell Sicat, Hanspeter Pfister, Aaron Quigley. IEEE VIS, Workshop on Immersive Analytics. (2017).
57. [The Emerging Genre of Data Comics](#): Benjamin Bach, Nathalie Henry Riche, Sheelagh Carpendale, Hanspeter Pfister. IEEE Computer Graphics and Applications 38 (3), 6-13. (2017).
58. [A Design Space for Spatio-Data Coordination: Tangible Interaction Devices for Immersive Information Visualisation](#): Maxime Cordeil, Benjamin Bach, Yongchao Li, Elliott Willson, Tim Dwyer. Proceedings of IEEE Pacific Visualization Symposium (Pacific Vis). (2017).
59. [Evaluating Perceptually Complementary Views for Network Exploration Tasks](#): Chungli Chang, Benjamin Bach, Tim Dwyer, Kim Marriott. ACM Conference on Human Factors in Information Systems (CHI). (2017).
60. [Magnostics: Image-based Search of Interesting Matrix Views for Guided Network Exploration](#): Michael Behrisch, Benjamin Bach, Michael Hund, Michael Delz, Laura von Rueden, Jean-Daniel Fekete, Tobias Scheck. IEEE Transactions on Visualization and Computer Graphics (TVCG). (2017).
61. [Towards Unambiguous Edge Bundling: Investigating Confluent Drawings for Network Visualization](#): Benjamin Bach, Nathalie Henry Riche, Christophe Hurter, Kim Marriott, Tim Dwyer. IEEE Transactions on Visualization and Computer Graphics (TVCG). (2017). [\[WEB\]](#)
62. [Telling Stories about Dynamic Networks with Graph Comics](#): Benjamin Bach, Nathalie Kerracher, Kyle W. Hall, Sheelagh Carpendale, Jessie Kennedy, Nathalie Henry Riche. Proceedings of the Conference on Human Factors in Information Systems (CHI). (2017).
63. [A Descriptive Framework for Temporal Data Visualizations Based on Generalized Space-Time Cubes](#): Benjamin Bach, Pierre Dragicevic, Daniel Archambault, Christophe Hurter, Sheelagh Carpendale. Computer Graphics Forum. (2017).
64. [Timelines Revisited: A Design Space and Considerations for Expressive Storytelling](#): Matthew Brehmer, Bongshin Lee, Benjamin Bach, Nathalie Henry Riche, Tamara Munzner. IEEE Transactions on Visualization and Computer Graphics (TVCG, Proceedings of InfoVis 2015). (2016).
65. [Matrix Reordering Methods for Table and Network Visualization](#): Michael Behrisch, Benjamin Bach, Nathalie Henry Riche, Tobias Schreck, Jean-Daniel Fekete. EuroVis (State-of-the-Art) 35 (3). (2016).

66. [Time Curves: Folding Time to Visualize Patterns of Temporal Evolution in Data](#): Benjamin Bach, Conglei Shi, Nicholas Heulot, Tara Madhyastha, Thomas Grabowski, Pierre Dragicevic. IEEE Transactions on Visualization and Computer Graphics (TCVG). (2016).
67. [NetworkCube: Bringing Dynamic Network Visualizations to Domain Scientists](#): B Bach, NH Riche, R Fernandez, E Giannidakis, B Lee, JD Fekete. Proceedings of IEEE VIS Conference, posters. (2015).
68. [Small MultiPiles: Piling Time to Explore Temporal Patterns in Dynamic Networks](#): B Bach, N Henry Riche, T Dwyer, T Madhyastha, JD Fekete, T Grabowski. Eurographics Conference on Visualization (EuroVis). (2015). [\[WEB\]](#)
69. [Visual and Audio Monitoring of Island Based Parallel Evolutionary Algorithms](#): H Gilbert, W Cancino, B Bach, J Pallamidessi, P Parrend, P Collet. Journal of Grid Computing 3 (13), 309-327. (2015).
70. [A Review of Temporal Data Visualizations Based on Space-Time Cube Operations](#): B Bach, P Dragicevic, D Archambault, C Hurter, S Carpendale. Eurographics Conference on Visualization. (2014).
71. [Visualizing Dynamic Networks with Matrix Cubes](#): Benjamin Bach, Emmanuel Pietriga, Jean-Daniel Fekete. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI). (2014)
72. [Gridvis: Visualisation of island-based parallel genetic algorithms](#): Lutton, Evelyne, Hugo Gilbert, Waldo Cancino, Benjamin Bach, Pierre Parrend, and Pierre Collet. European Conference on the Applications of Evolutionary Computation, pp. 702-713. Springer, Berlin, Heidelberg. (2014).
73. [Visual and Audio Monitoring of Island Based Parallel Evolutionary Algorithms](#): E Lutton, H Gilbert, W Cancino, B Bach, J Pallamidessi, P Parrend. Journal of Grid Computing, 1-19. (2014).
74. [GraphDiaries: Animated Transitions and Temporal Navigation for Dynamic Networks](#): B Bach, E Pietriga, JD Fekete. Transactions on Visualization and Computer Graphics (TVCG), 1-1. (2014)
75. [Weighted graph comparison techniques for brain connectivity analysis](#): B Alper, B Bach, N Henry Riche, T Isenberg, JD Fekete. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems. (2013).
76. [Visualizing populated ontologies with OntoTrix](#): Bach, B., Pietriga, E. and Luccardi, I., 2013. International Journal On Semantic Web and Information Systems (IJSWIS), 9(4), pp.17-40.
77. [Interactive random graph generation with evolutionary algorithms](#). Bach, B., Spritzer, A., Lutton, E. and Fekete, J.D., 2012, September. In International Symposium on Graph Drawing (pp. 541-552). Springer, Berlin, Heidelberg.