

# MATTHEW BREHMER

## VISUALIZATION RESEARCH AND DEVELOPMENT



### CONTACT

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### EDUCATION

PhD, Computer Science  
UNIVERSITY OF BRITISH COLUMBIA  
2011 - 2016

MSc, Human-Computer  
Interaction  
UNIVERSITY OF BRITISH COLUMBIA  
2009 - 2011

BComp, Cognitive Science  
QUEEN'S UNIVERSITY  
2004 - 2009

### EMPLOYMENT HISTORY

Postdoctoral Researcher  
MICROSOFT RESEARCH  
2016 - 2019

Research Assistant  
UNIVERSITY OF BRITISH COLUMBIA  
2009 - 2016

Research Intern  
MICROSOFT RESEARCH  
2015

Research Intern  
PULSE ENERGY  
2013 - 2014

Research Assistant  
QUEEN'S UNIVERSITY  
2009

User Experience Design /  
Front-End Development Intern  
EMC DOCUMENTUM  
2007 - 2008

### BIO

Matthew is an expert in information visualization, a practice that brings together data analysis, software development, user experience research, and design. He has spoken about his work at venues such as IEEE VIS, ACM CHI, and OpenVisConf, and he has published several papers about his work in IEEE TVCG, the top journal for visualization research. He has been a program committee member for a number of events including IEEE InfoVis, Information+, and the VIS Arts Program. In 2018, he was a co-organizer of the VisInPractice event at IEEE VIS, the PacificVis Visual Data Storytelling Contest, and the MobileVis Workshop at ACM CHI. His visualization work can be seen and used online and in Microsoft's Power BI.

### APPLICATION AREAS

Matthew has applied his expertise in visualization and human-computer interaction in the domains of energy management / conservation, personal health, and data journalism.

### CURRENT ROLE

As a postdoctoral researcher at Microsoft Research, Matthew focuses on expressive information design tools for storytelling and journalism, as well as visualization for mobile devices. His role involves designing prototypes, developing applications, conducting experiments, analyzing data, writing research papers, and consulting with teams at Microsoft.

### TECHNICAL SKILLS

Matthew predominantly develops for the web (JavaScript, HTML, CSS) and uses the D3.js library for visualization, having previously worked with Flare / ActionScript and Processing / P5.js. He performs data analysis in R and develops data analysis tools such as Shiny. He also works with business intelligence software (Power BI, Tableau), diagramming tools (OmniGraffle, Visio), and various presentation and video production tools.

### SELECTED PROJECTS

#### Visualizing Ranges on Mobile Devices

A node.js web app used in a crowdsourced experiment.  
[aka.ms/ranges](https://aka.ms/ranges)  
2018



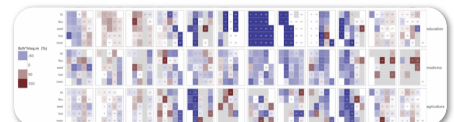
#### Timeline Storyteller

An interactive authoring tool for Power BI and the web.  
[timelinestoryteller.com](https://timelinestoryteller.com)  
2015 - 2017



#### Portfolio Sandbox

A R/Shiny dashboard for analyzing building energy usage.  
[mattbrehmer.shinyapps.io/PortfolioSandbox](https://mattbrehmer.shinyapps.io/PortfolioSandbox)  
2014



#### SoundConsensus

A visualization of (dis)agreement in music reviews.  
[mattbrehmer.github.io/SoundConsensus](https://mattbrehmer.github.io/SoundConsensus)  
2014



## SELECTED TALKS / VIDEOS

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A complete list of talks along with links to slides are available at [mattbrehmer.github.io/#talks](https://mattbrehmer.github.io/#talks).

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| <a href="#">The Timeline Storyteller Custom Visual for Power BI</a><br>Microsoft Power BI YouTube Channel<br>▶ <a href="https://youtu.be/bwiMfwBVsq">youtu.be/bwiMfwBVsq</a>                   | 2017 / 09 / 15 |
| <a href="#">What Story Does Your Timeline Tell?</a><br>OpenVisConf 2017<br>▶ <a href="https://youtu.be/gQKUI_1ryo4">youtu.be/gQKUI_1ryo4</a>   | 2017 / 04 / 24 |
| <a href="#">Why Visualization? Task Abstraction for Analysis and Design</a><br>Microsoft Research<br>▶ <a href="https://youtu.be/Gg9UGHu4Qao">youtu.be/Gg9UGHu4Qao</a>                         | 2016 / 02 / 01 |
| <a href="#">Matches, Mismatches, &amp; Methods: Workflows for Energy Portfolio Analysis</a><br>IEEE VIS 2015, InfoVis Track<br>▶ <a href="https://vimeo.com/236169723">vimeo.com/236169723</a> | 2015 / 10 / 28 |

## SELECTED PUBLICATIONS

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A complete list of publications with links to PDFs are available at [mattbrehmer.github.io/#pubs](https://mattbrehmer.github.io/#pubs).

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| <a href="#">Visualizing Ranges over Time on Mobile Phones</a><br>Matthew Brehmer, Bongshin Lee, Petra Isenberg, Eun Kyoung Choe<br><i>IEEE Transactions on Visualization and Computer Graphics</i> (Volume 25, Issue 1)  | 2018 |
| <a href="#">Timelines Revisited:<br/>A Design Space and Considerations for Expressive Storytelling</a><br>Matthew Brehmer, Bongshin Lee, Benjamin Bach, Nathalie Riche, Tamara Munzner<br><i>IEEE Transactions on Visualization and Computer Graphics</i> (Volume 23, Issue 9)               | 2017 |
| <a href="#">Overview: The Design, Adoption, and Analysis of a Visual Document Mining<br/>Tool For Investigative Journalists</a><br>Matthew Brehmer, Stephen Ingram, Jonathan Stray, Tamara Munzner.<br><i>IEEE Transactions on Visualization and Computer Graphics</i> (Volume 20, Issue 12) | 2014 |
| <a href="#">A Multi-Level Typology of Abstract Visualization Tasks</a><br>Matthew Brehmer and Tamara Munzner<br><i>IEEE Transactions on Visualization and Computer Graphics</i> (Volume 19, Issue 12)  | 2013 |
| <a href="#">Investigating Interruptions in the Context of<br/>Computerised Cognitive Testing for Older Adults</a><br>Matthew Brehmer, Joanna McGrenere, Charlotte Tang, Claudia Jacova<br>In <i>Proceedings of the ACM CHI Conference</i> .  | 2012 |

## REFERENCES

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References are available upon request.