

# TOOLS FOR EXPRESSIVE INFORMATION VISUALIZATION DESIGN

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A SHOWCASE OF PROJECTS FROM THE  
MSR DATA-DRIVEN STORYTELLING TEAM

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# DATA-DRIVEN STORYTELLING AT MICROSOFT

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# PROJECT SHOWCASE:



[ChartAccent](#) (2016) · [Timeline Storyteller](#) (2017) · [Charticulator](#) (2018)

# IN COLLABORATION WITH...

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- External Collaborators: Donghao Ren (UCSB), Tobias Höllerer (UCSB), Eun Kyoung Choe (UMD), Benjamin Bach (University of Edinburgh), Tamara Munzner (UBC)
- Microsoft Research Special Projects (a.k.a. Project Essex): David Tittsworth, Darren Edge, Kate Lytvynets, Chris Trevino, Nathan Evans, Christopher White
- Microsoft Power BI
- The Microsoft Data Journalism Program

# CHARTACCENT

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Create annotated & accentuated charts with a few clicks.

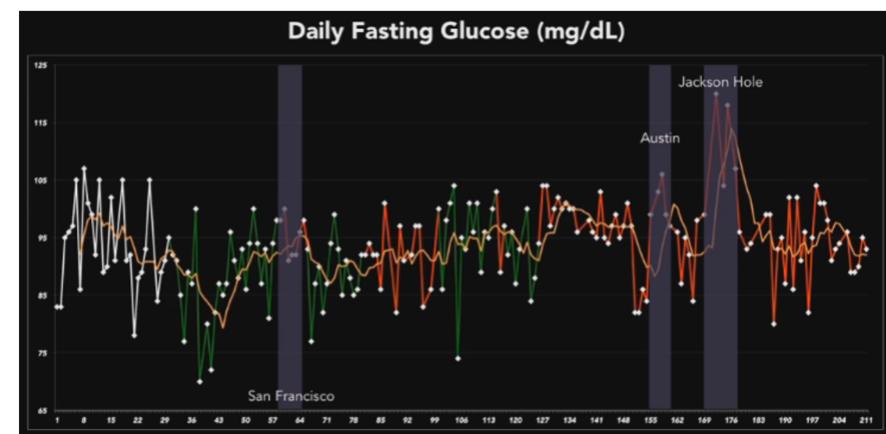
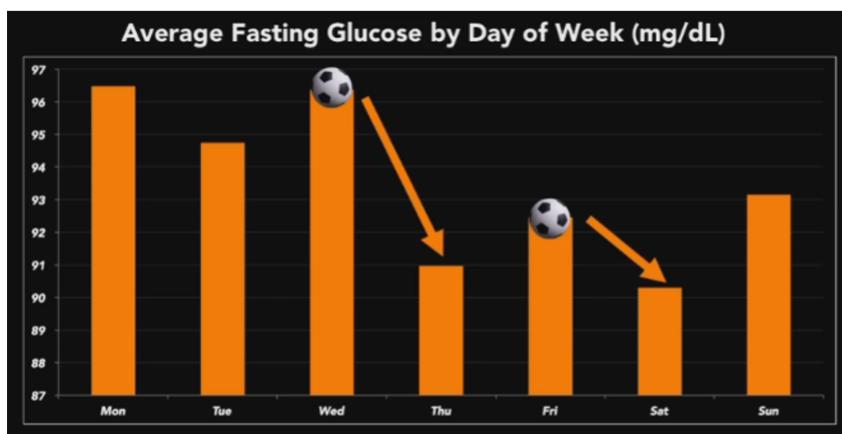
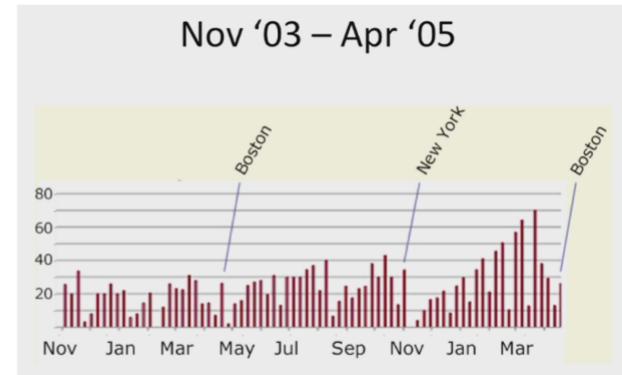
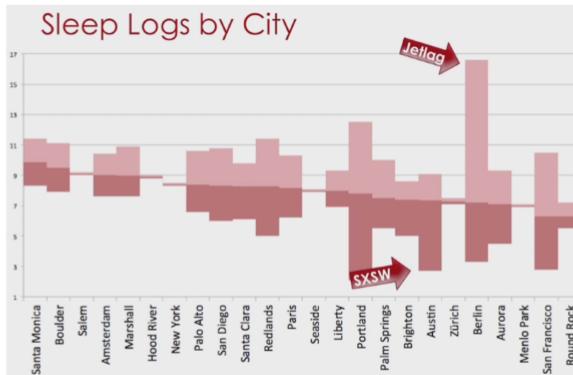
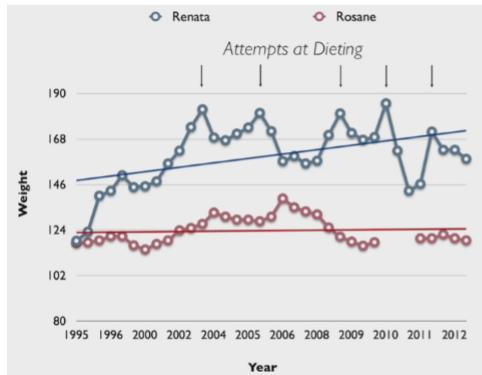
[chartaccent.github.io](https://chartaccent.github.io)

By Donghao Ren (UCSB), Matthew Brehmer, Bongshin Lee,  
Tobias Höllerer (UCSB), and Eun Kyoung Choe (UMD).

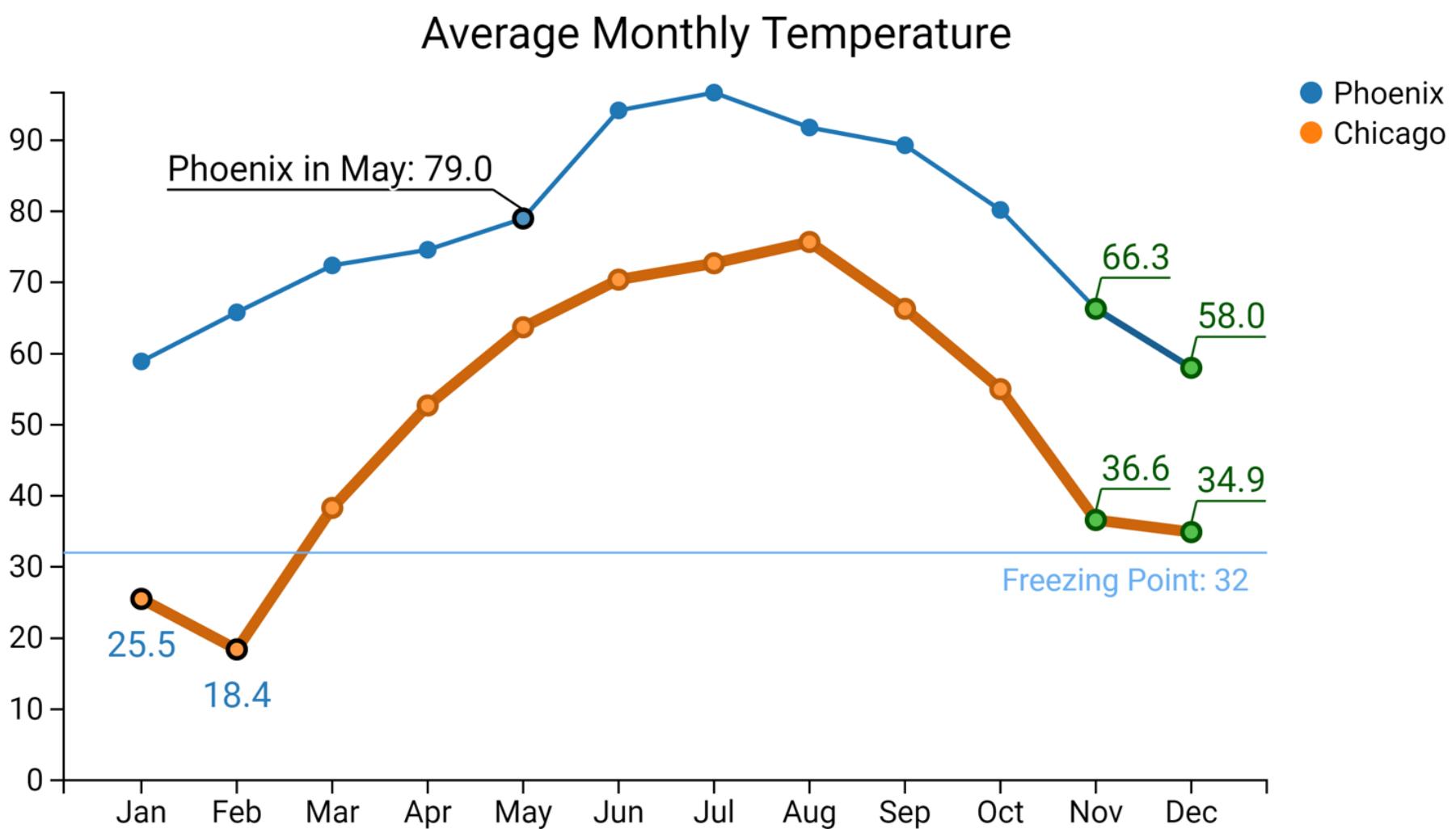
*"the annotation layer is the  
most important thing we do...  
otherwise it's a case of here it is,  
you go figure it out."*

- Amanda Cox,  
*New York Times* Graphics Editor

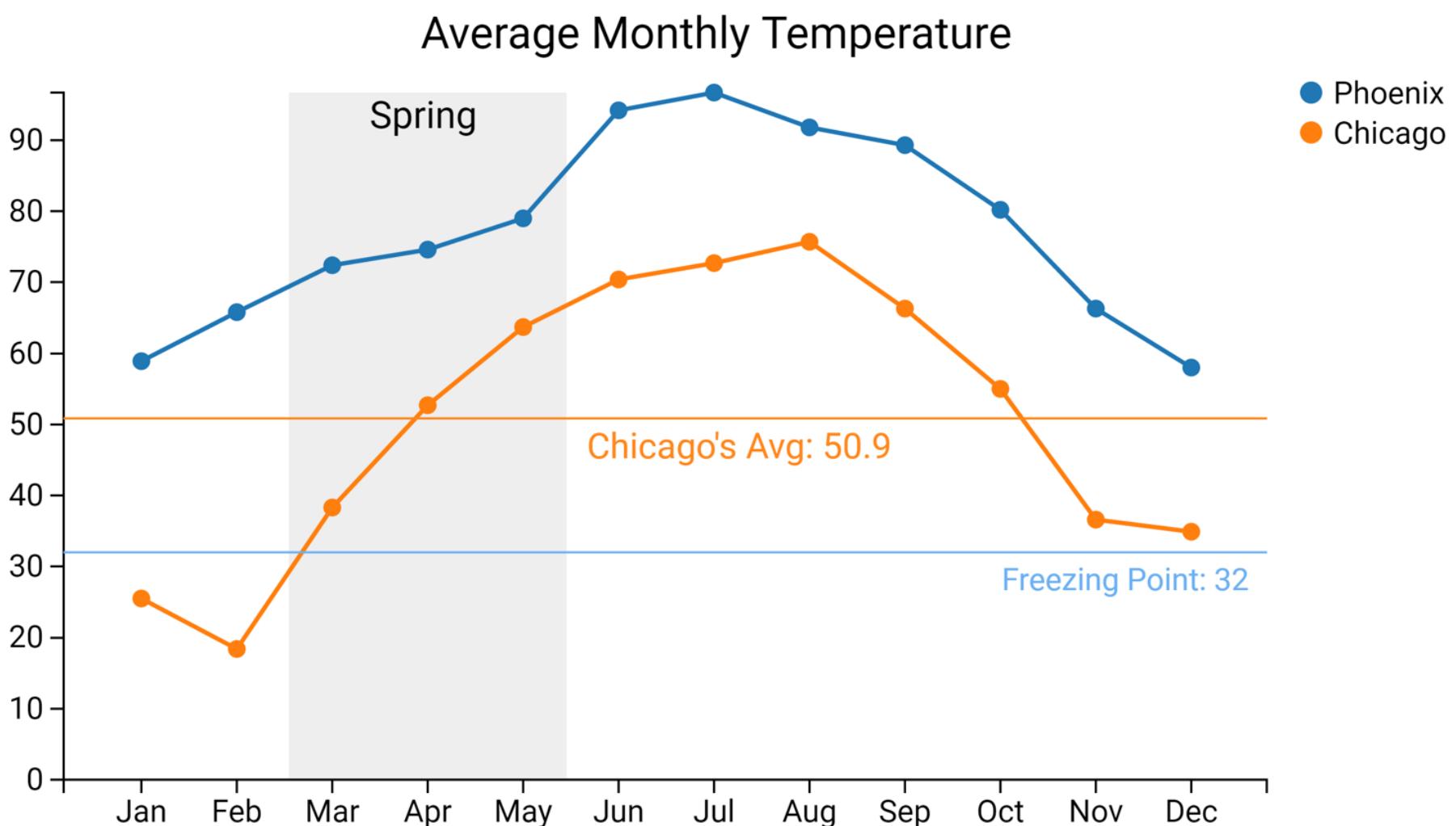
# CHART ANNOTATION IN THE WILD



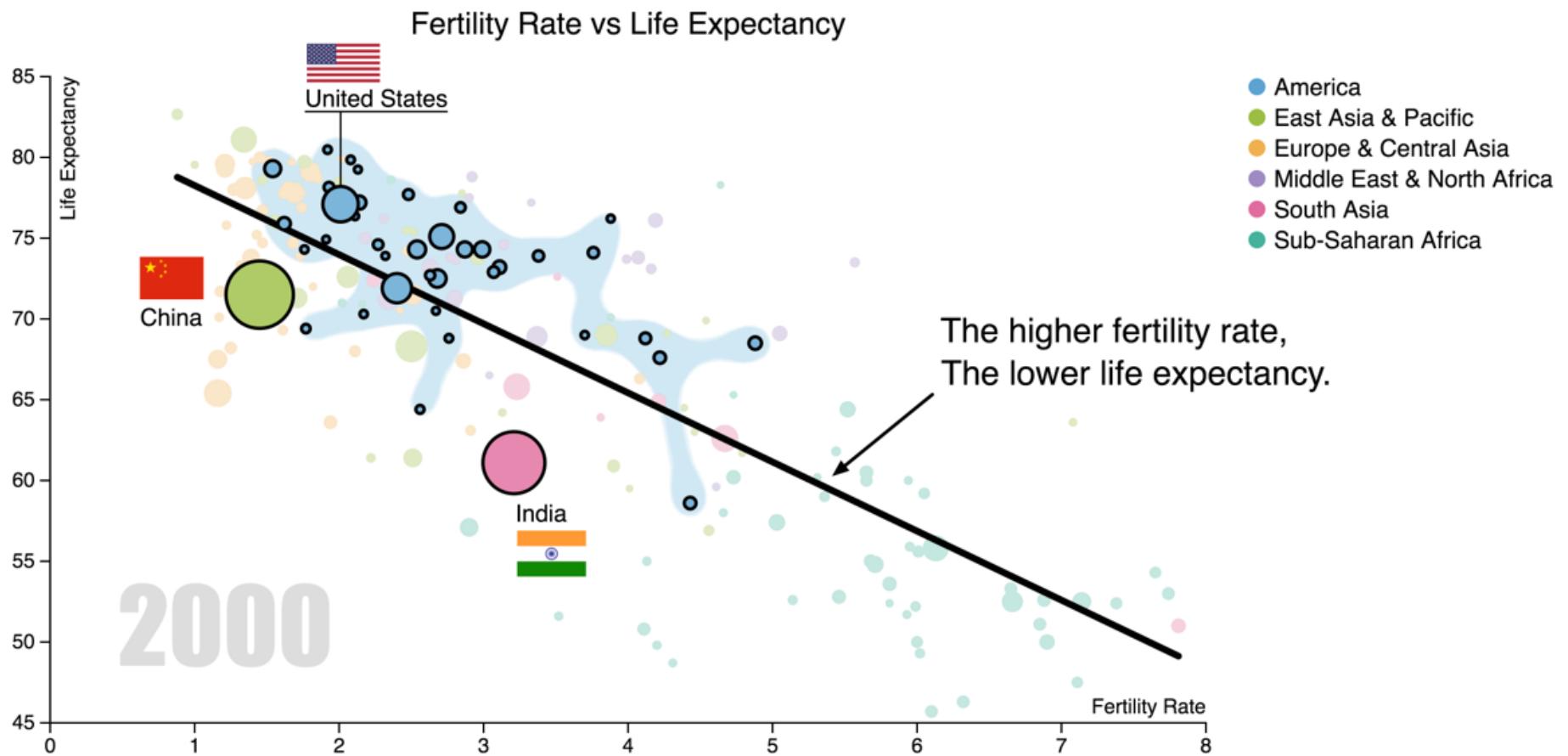
# FORMS OF ANNOTATION



# FORMS OF ANNOTATION



# FORMS OF ANNOTATION



CHARTACCENT.GITHUB.IO

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Create annotated & accentuated charts with a few clicks.

In the browser or in Power BI (bar and line charts).

# TIMELINE STORYTELLER

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A tool for designing and presenting  
visually expressive timeline narratives.

[timelinestoryteller.com](http://timelinestoryteller.com)

By Matthew Brehmer, Bongshin Lee, and Nathalie Henry Riche,  
with Chris White, Darren Edge, David Tittsworth, and Kate Lytvynets.

Based on design research conducted in collaboration with Benjamin Bach  
(University of Edinburgh) and Tamara Munzner (UBC).

# WHAT HAPPENED WHEN?

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In what sequence did the events occur?

How long did the events last?

How long between event **A** and event **B**?

Did **A** and **B** co-occur?

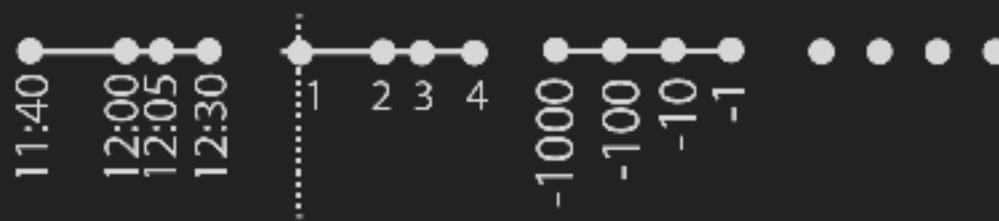
When did **A** and **B** occur relative to event **C**?

# A TIMELINE DESIGN SPACE

REPRESENTATIONS:



SCALES:



LAYOUTS:



# TIMELINE STORYTELLER FOR THE WEB AND POWER BI

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Choice of representations and time scales

Incrementally reveal, hide, highlight, and annotate

Export, share, and present

# MORE TIMELINE STORYTELLER STORIES

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- *A History of the UK National Trust*  
Microsoft Data Insights Summit 2017
- *A History of Artificial Intelligence*  
Dublin Data Summit, Future of Storytelling Summit 2017
- *The Daily Routines of Famous Creative People*  
Tapestry Conference 2017, OpenVisConf 2017, IEEE VIS 2017
- *TV Network Ratings* by Pragmatic Works
- *Tropical Cyclones* by Manga Solutions

# RESULTS

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- Power BI version: 14K+ downloads, 2K unique monthly users, 35K+ YouTube views, 30+ tech news / blog posts, several community-produced tutorials.
- Web version: 223 cases where authors opted into sharing their unique exported content with us.
- Storytelling contest: 7 entries, 1 winner, 1 honorable mention.

# TIMELINE STORYTELLER

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A tool for designing and presenting  
visually expressive timeline narratives.

**[timelinestoryteller.com](http://timelinestoryteller.com)**

# CHARTICULATOR

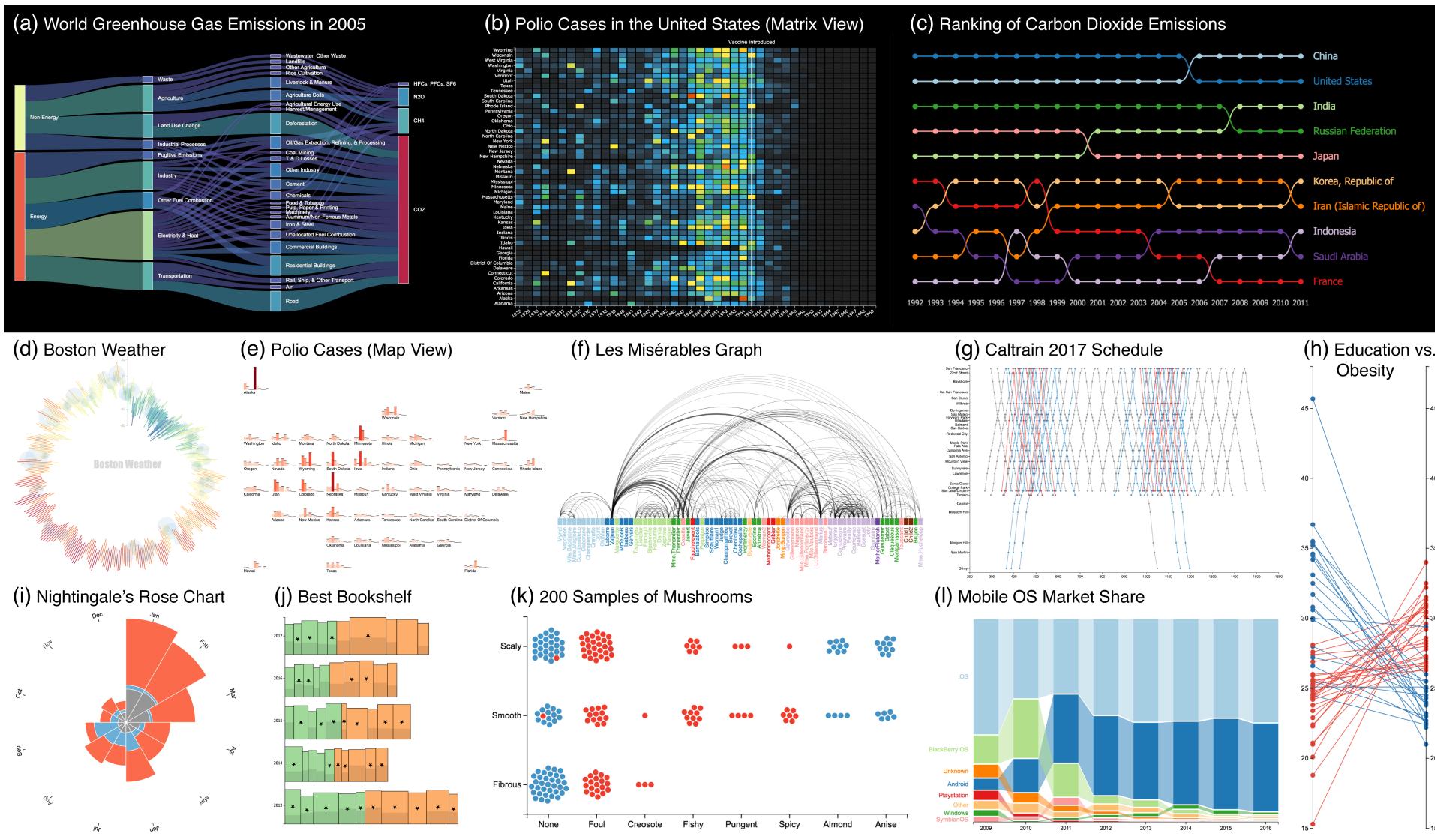
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Create bespoke chart layouts without programming.

[charticulator.com](http://charticulator.com)

By Donghao Ren (UCSB), Bongshin Lee, and Matthew Brehmer

with Nathan Evans, Chris Trevino, David Tittsworth, and Kate Lytvynets.



**chartaccent.github.io**

open-source tool for web & Power BI

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**timelinestoryteller.com**

open-source tool for web & Power BI

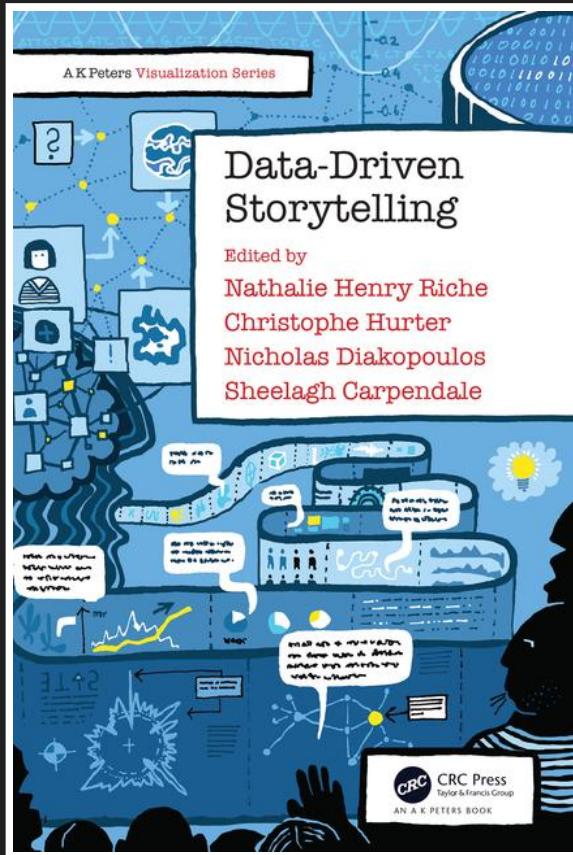
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**charticulator.com**

open-source tool for the web

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Chapter 11: *Evaluating Data-Driven Stories & Storytelling Tools*  
by Fereshteh Amini, Matthew Brehmer, Gordon Bolduan, Christina Elmer, & Benjamin Wiederkehr