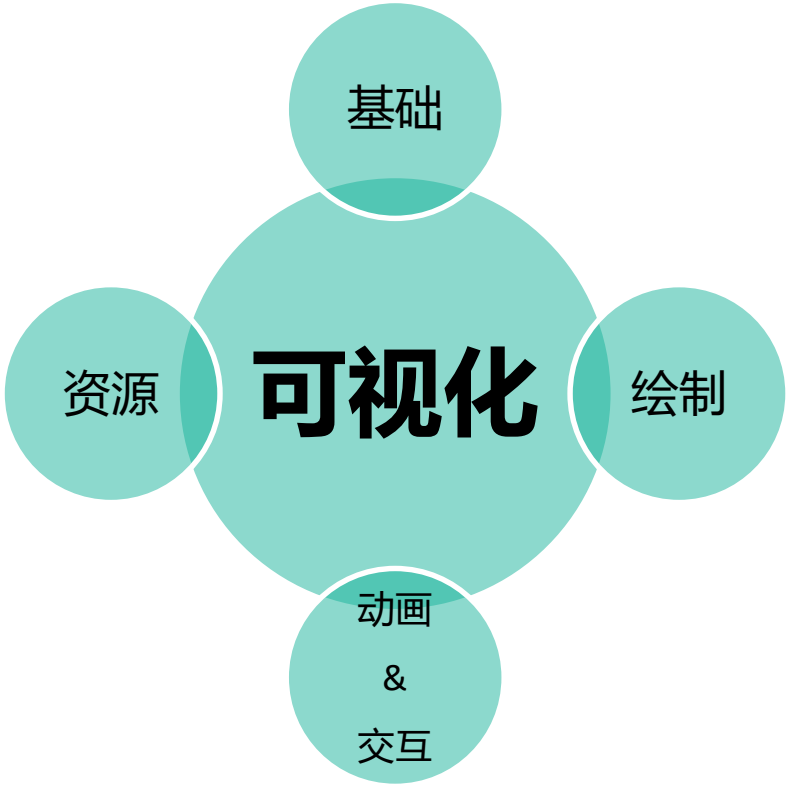
可视化工具
& 平台分享

梁　晶

2018年10月17日

概览



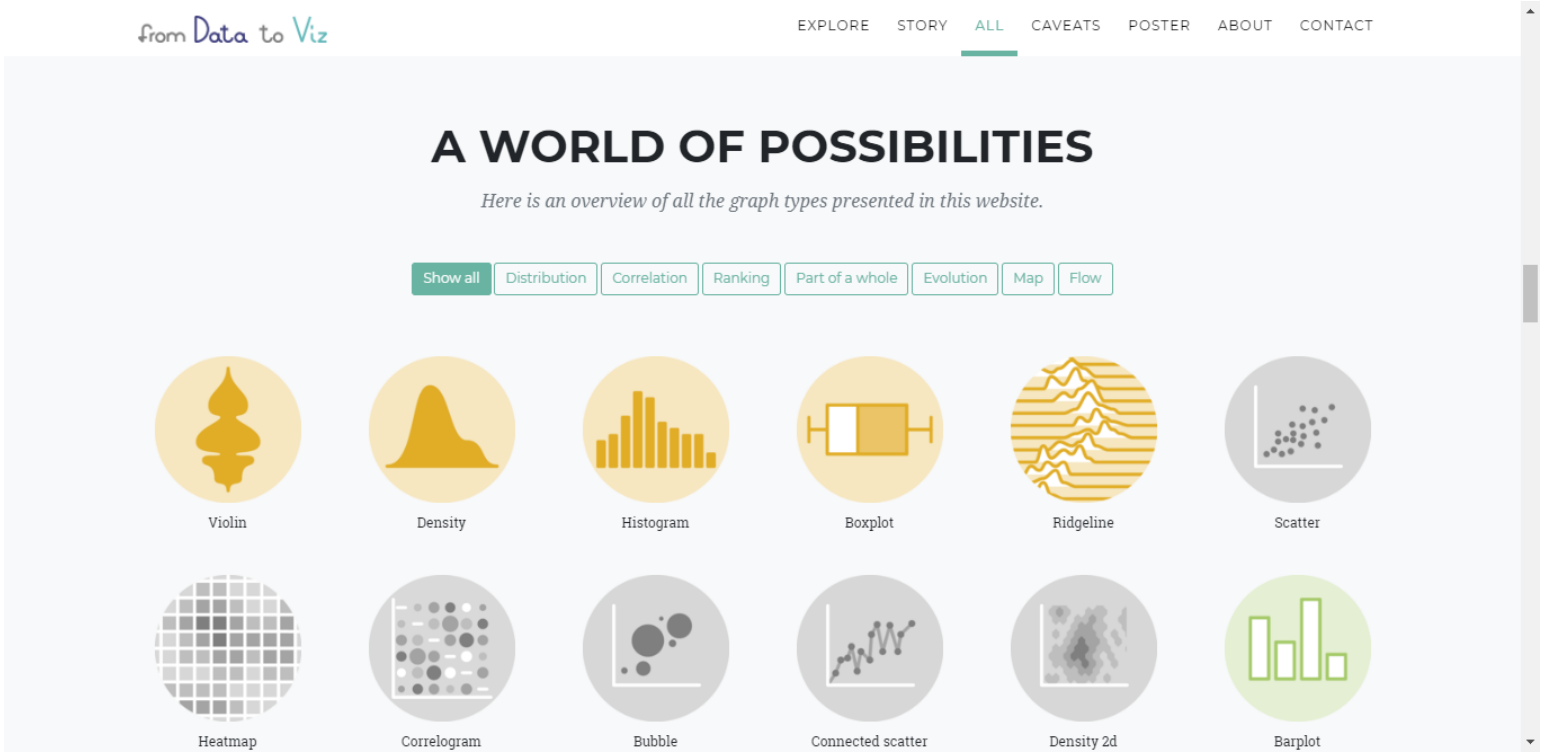
01

PART 01

第一部分

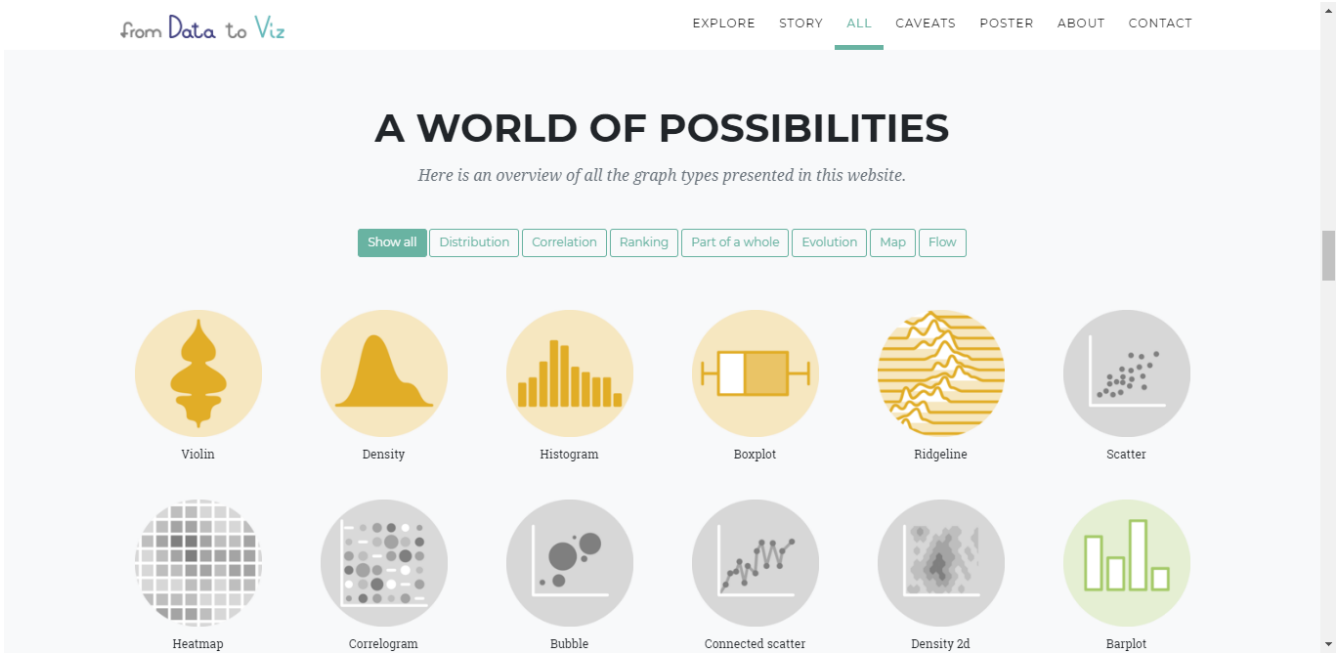
from Data to Viz

From Data to Viz



https://www.data-to-viz.com/

From Data to Viz

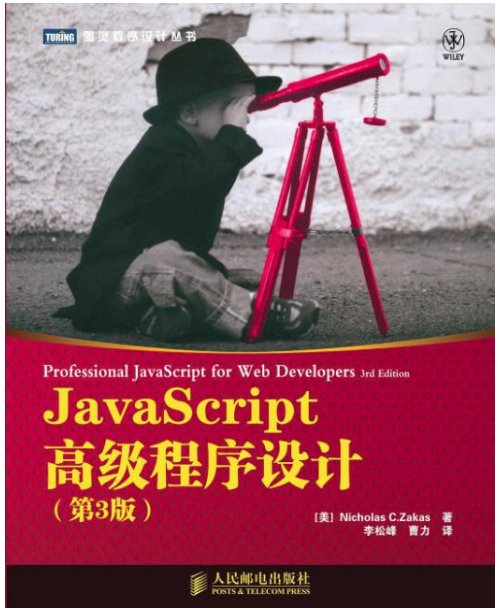


Order your data

When displaying the value of several entities, ordering them makes the graph much more insightful.

https://www.data-to-viz.com/

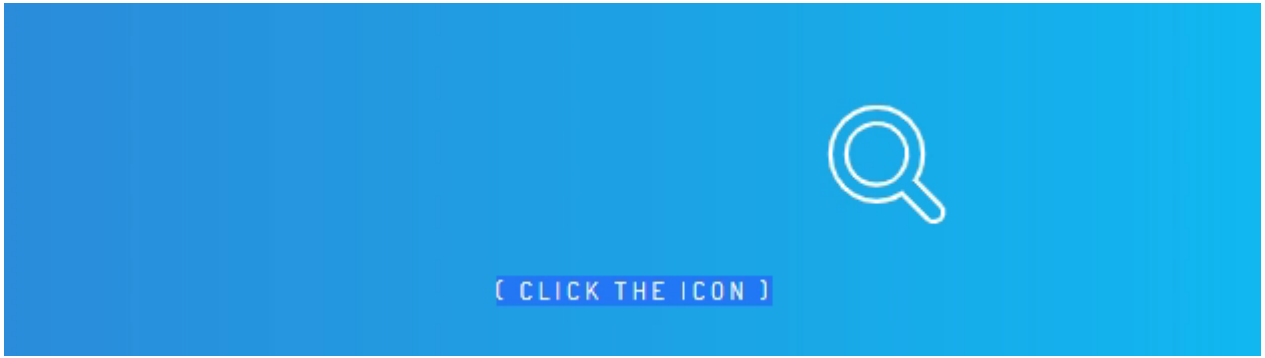
JAVASCRIPT



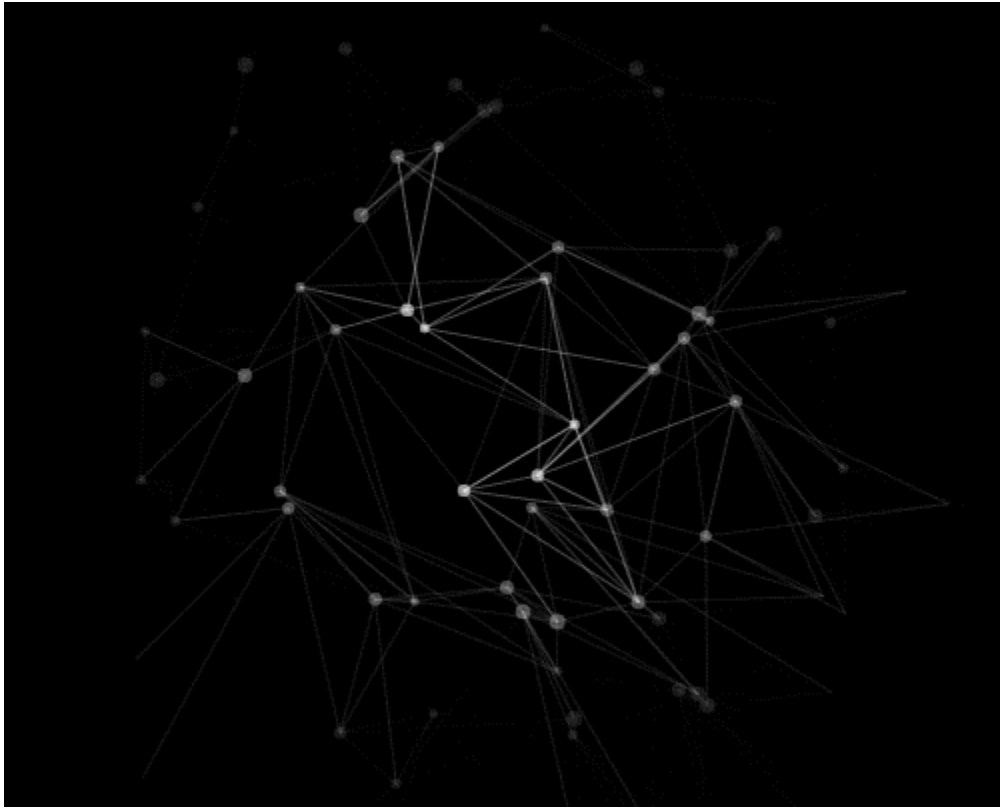
JavaScript高级程序设计

ECMAScript 6 入门

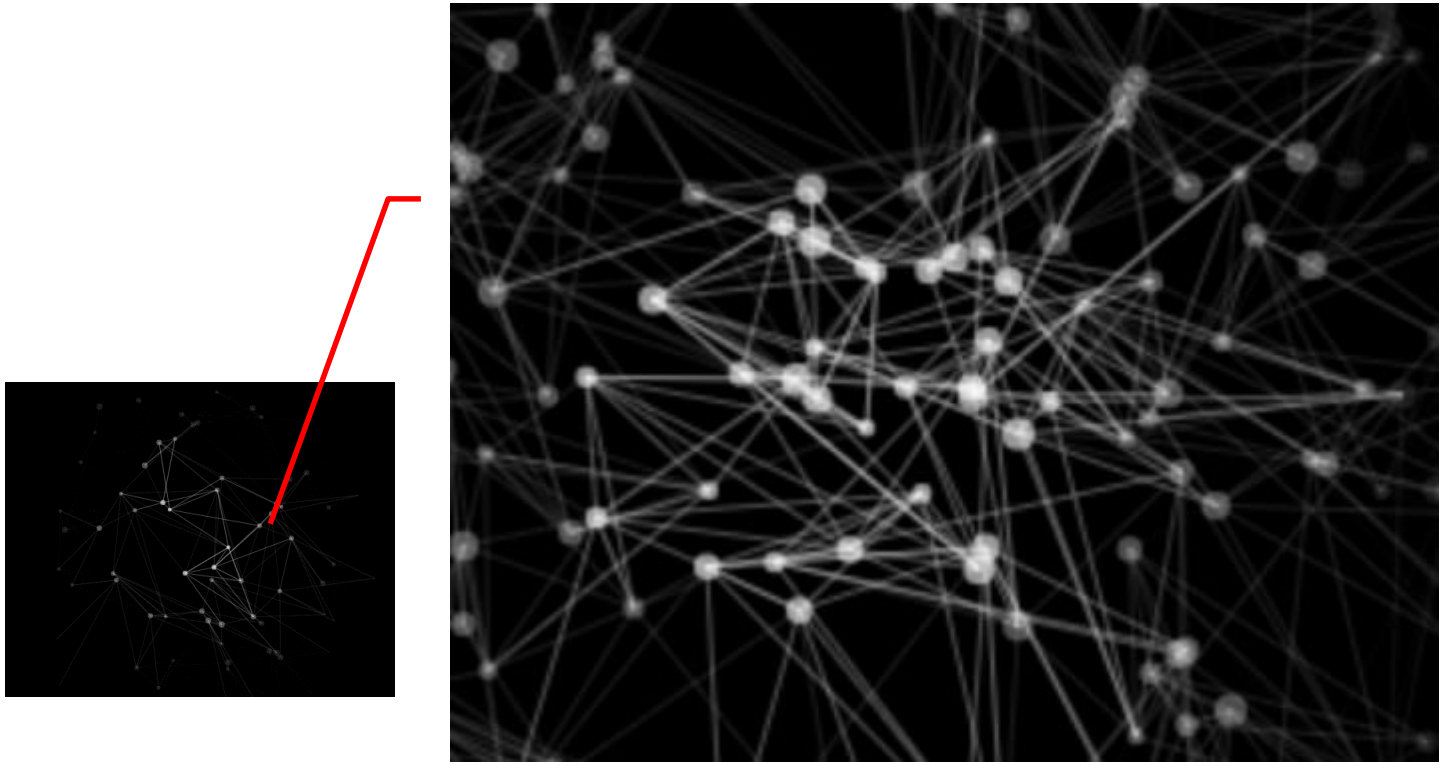
SVG vs CANVAS



SVG vs CANVAS



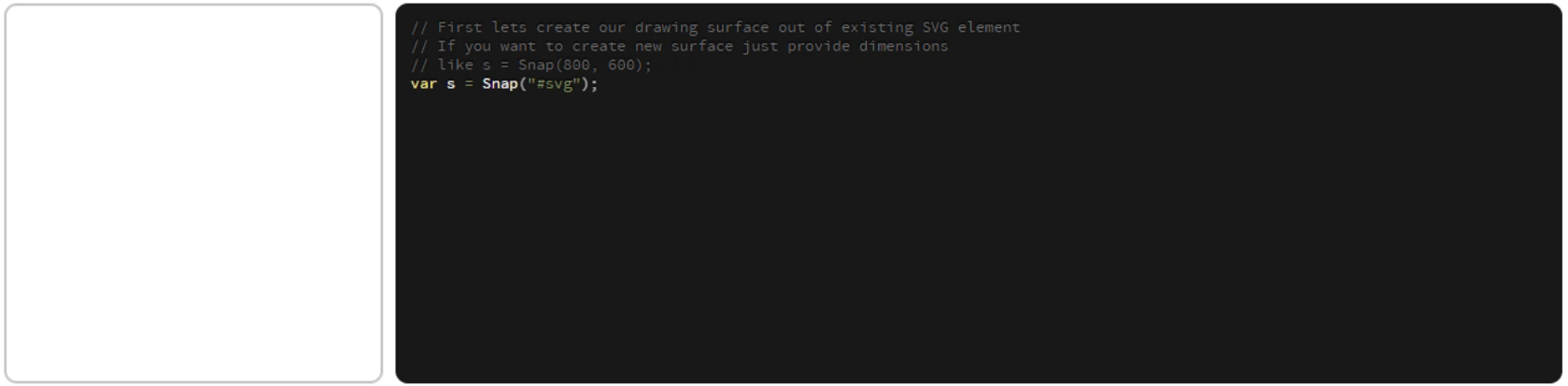
SVG vs CANVAS



SVG vs CANVAS

SVG	CANVAS
• 不依赖分辨率 • 支持事件处理 • 复杂情况不适用	• 依赖于分辨率 • 不支持事件处理 • 适用于数据量较大的情况

Snap.svg



```
// First lets create our drawing surface out of existing SVG element
// If you want to create new surface just provide dimensions
// like s = Snap(800, 600);
var s = Snap("#svg");
```

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

http://snapsvg.io/

02

PART 02

第二部分

绘　　制

D3.js

https://d3js.org/

D3

Mike Bostock

A Better Way to Code — April 28, 2017

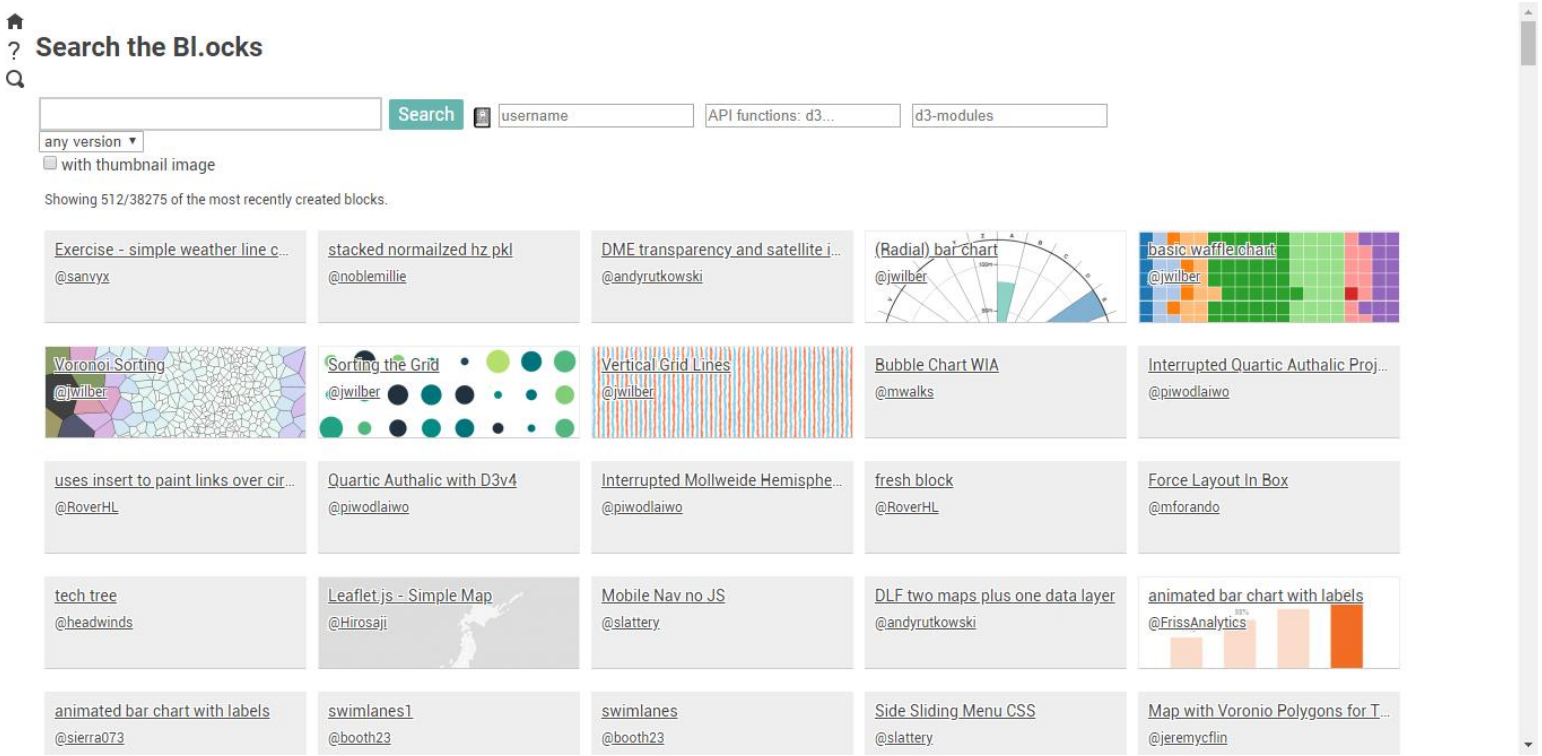
Command-Line Cartography — December 9, 2016


```
:{"STATEFP":"06","COUNTYFP":"001","TRACTCE":"402700","AFFGEOID":"1400000US06001402700","GEOID":"06001402700","NAME":"4027","LSAD":"CT","ALAND":
"Polygon","coordinates":[[[-122.279921,37.811183],[-122.278681,37.814574],[-122.275858,37.813468],[-122.274122,37.812829],[-122.273394,37.81272
2,37.811471],[-122.273353,37.810465],[-122.275979,37.806222],[-122.27712199999999,37.806706999999996],[-122.278678,37.807283999999996],[-122.28
]]]}},{"type":"Feature","properties":{"STATEFP":"06","COUNTYFP":"001","TRACTCE":"404700","AFFGEOID":"1400000US06001404700","GEOID":"06001404700
00169,"AWATER":0},"geometry":{"type":"Polygon","coordinates":[[[-122.214677,37.812688],[-122.213172,37.815784],[-122.210178,37.818613],[-122.20
],[-122.199655,37.812202],[-122.197791,37.810589],[-122.201658,37.810168999999995],[-122.206073,37.807279],[-122.20737199999999,37.806408999999
505,37.806913],[-122.209615,37.807804999999995],[-122.21206,37.809954999999995],[-122.21091,37.81061],[-122.213383,37.812182],[-122.214677,37.8
```


What Makes Software Good? — March 9, 2016

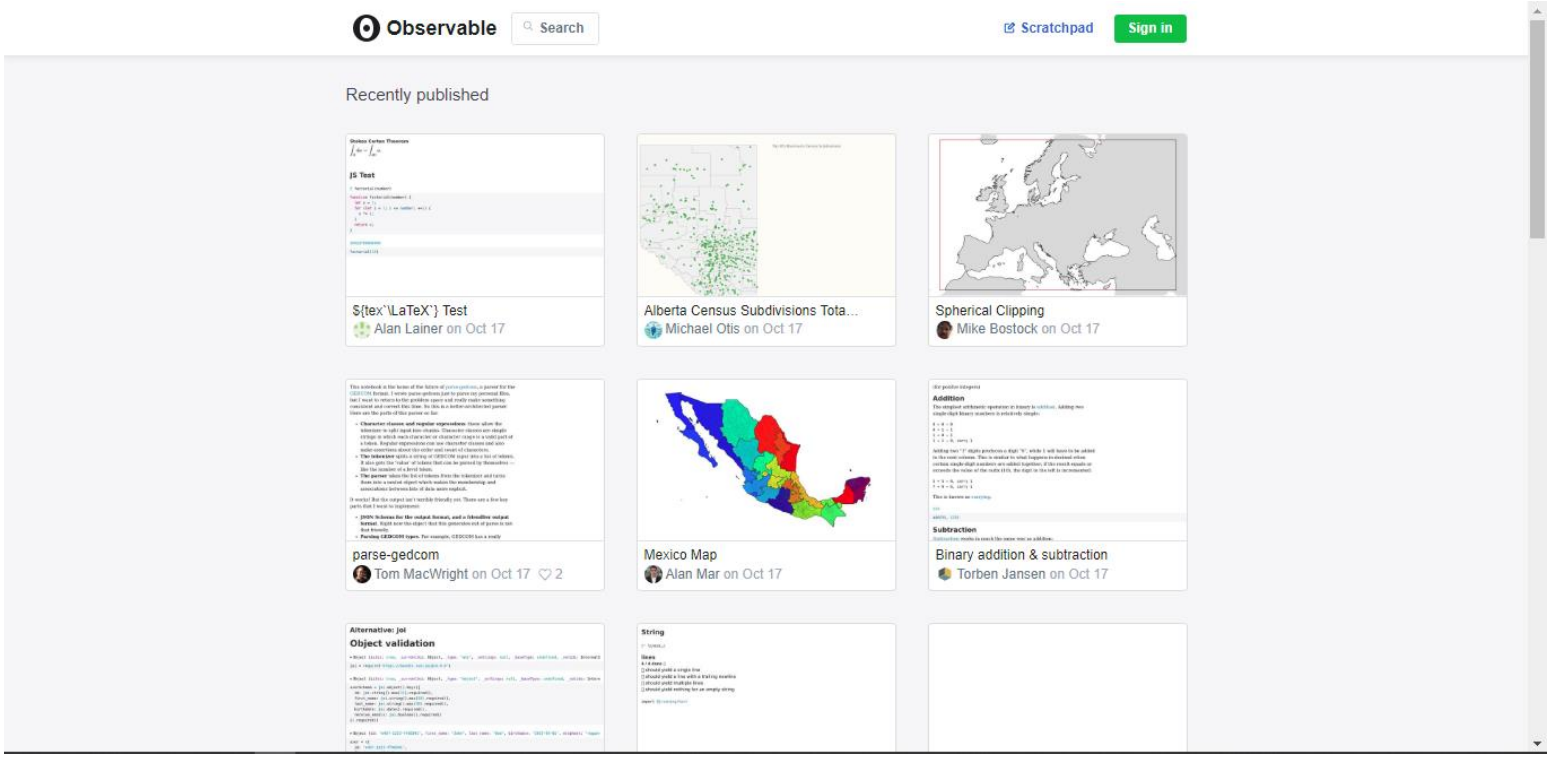
https://bost.ocks.org/mike/

D3作品集



http://blockbuilder.org/search

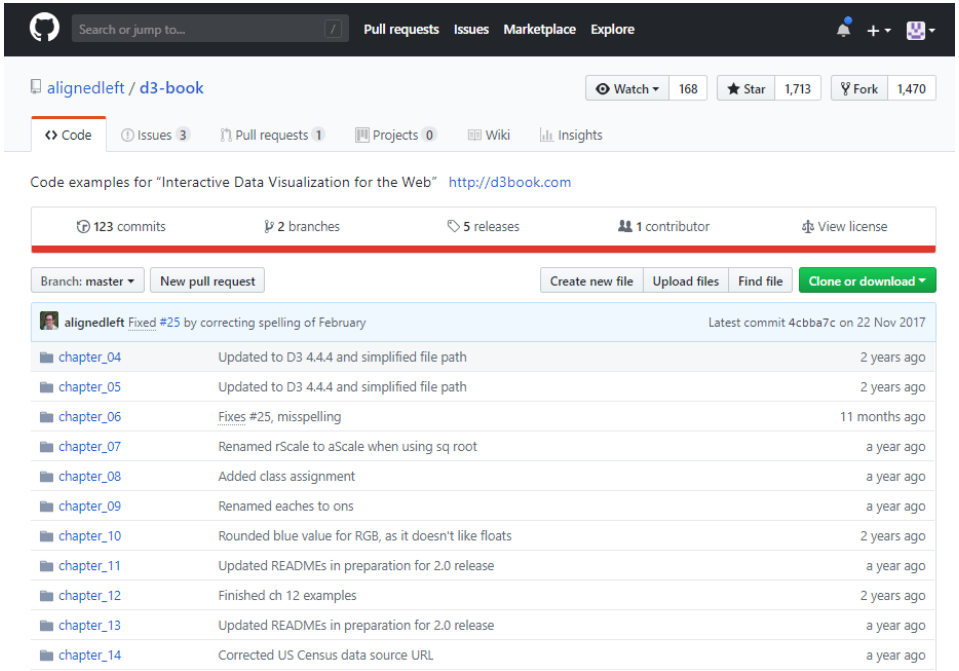
D3作品集：Observable



https://beta.observablehq.com/

D3基础教程

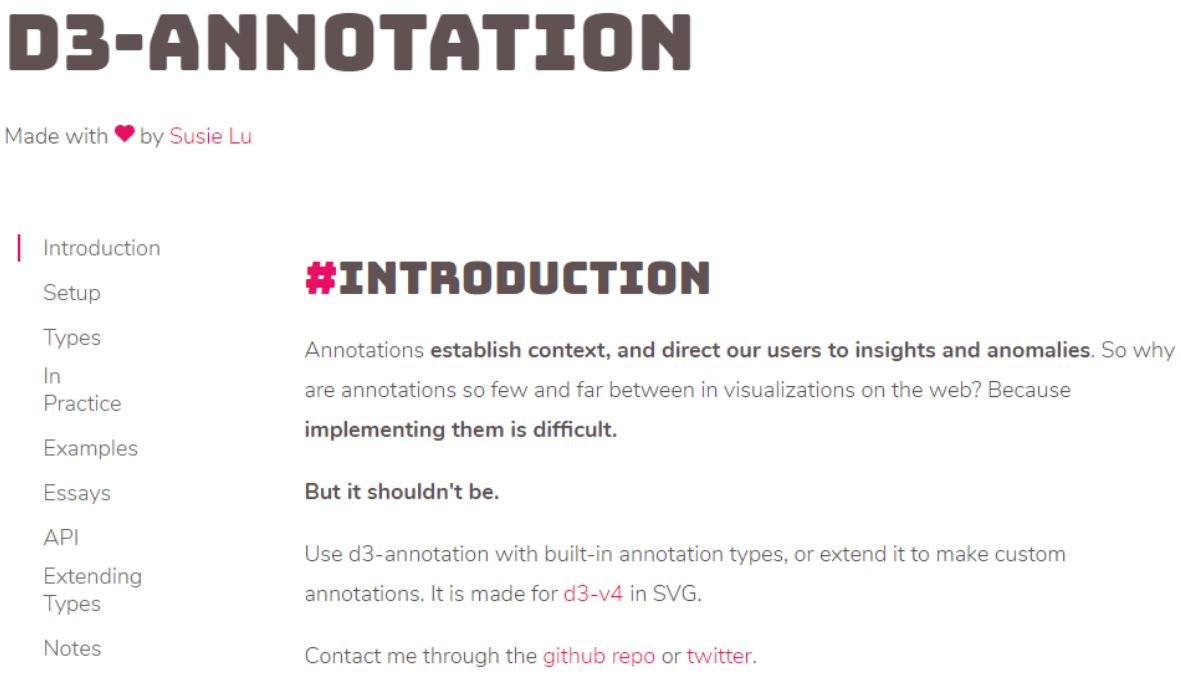
LearningD3.js



D3-book

LearningD3.js：https://d3js.org/
D3-book：https://github.com/alignedleft/d3-book/ 可视化工具及平台分享

D3-Annotation



https://d3-annotation.susielu.com/

D3-Annotation

D3-ANNOTATION

Made with ♥ by Susie Lu

- Introduction
- Setup
- Types
- In Practice
- Examples
- Essays
- API
- Extending Types
- Notes

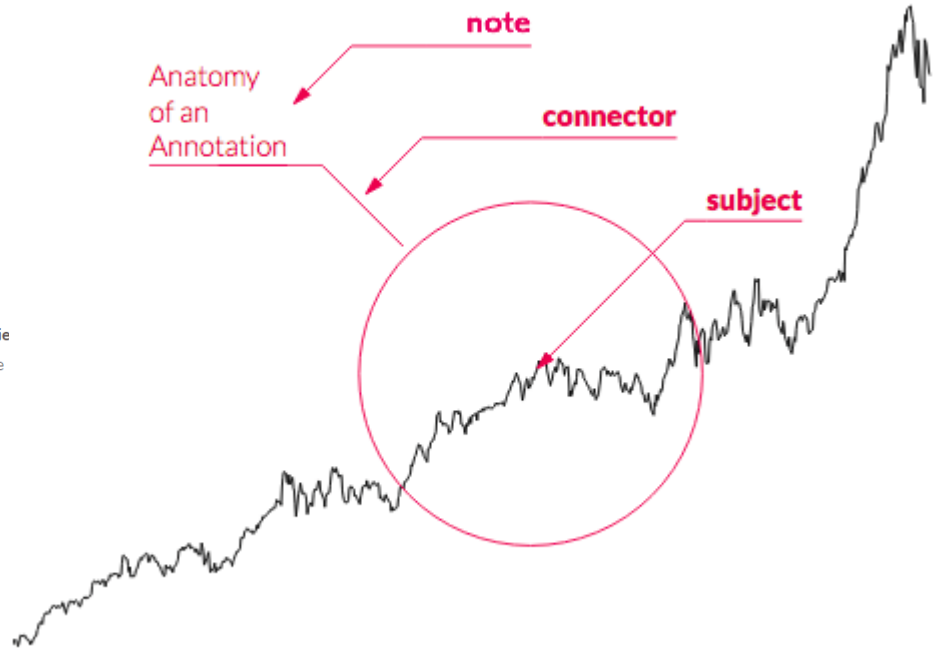
#INTRODUCTION

Annotations **establish context, and direct our users to insights and anomalie** are annotations so few and far between in visualizations on the web? Because **implementing them is difficult.**

But it shouldn't be.

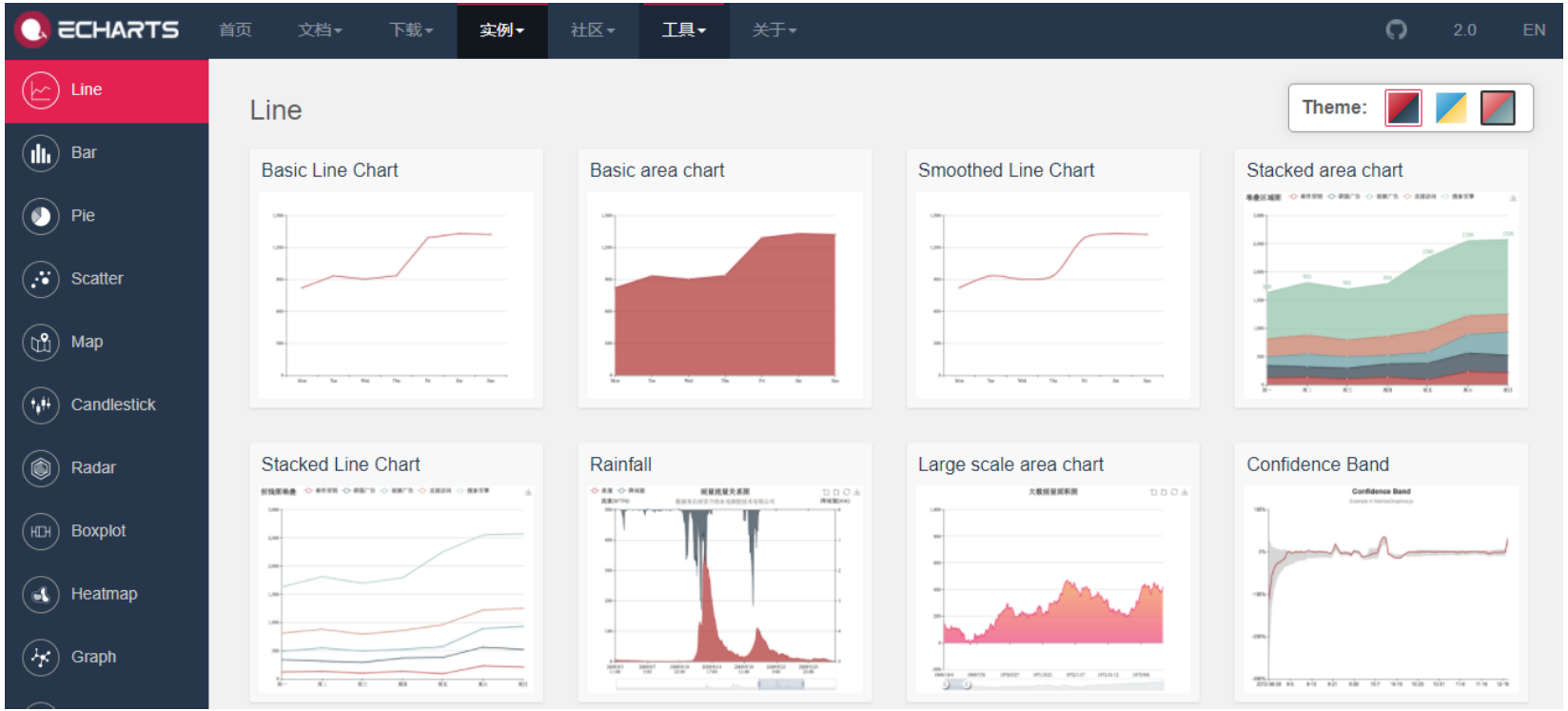
Use d3-annotation with built-in annotation types, or extend it to make custom annotations. It is made for d3-v4 in SVG.

Contact me through the github repo or twitter.



https://d3-annotation.susielu.com/

ECharts



http://echarts.baidu.com/examples/

AntV – G2

https://antv.alipay.com/zh-cn/g2/3.x/index.html

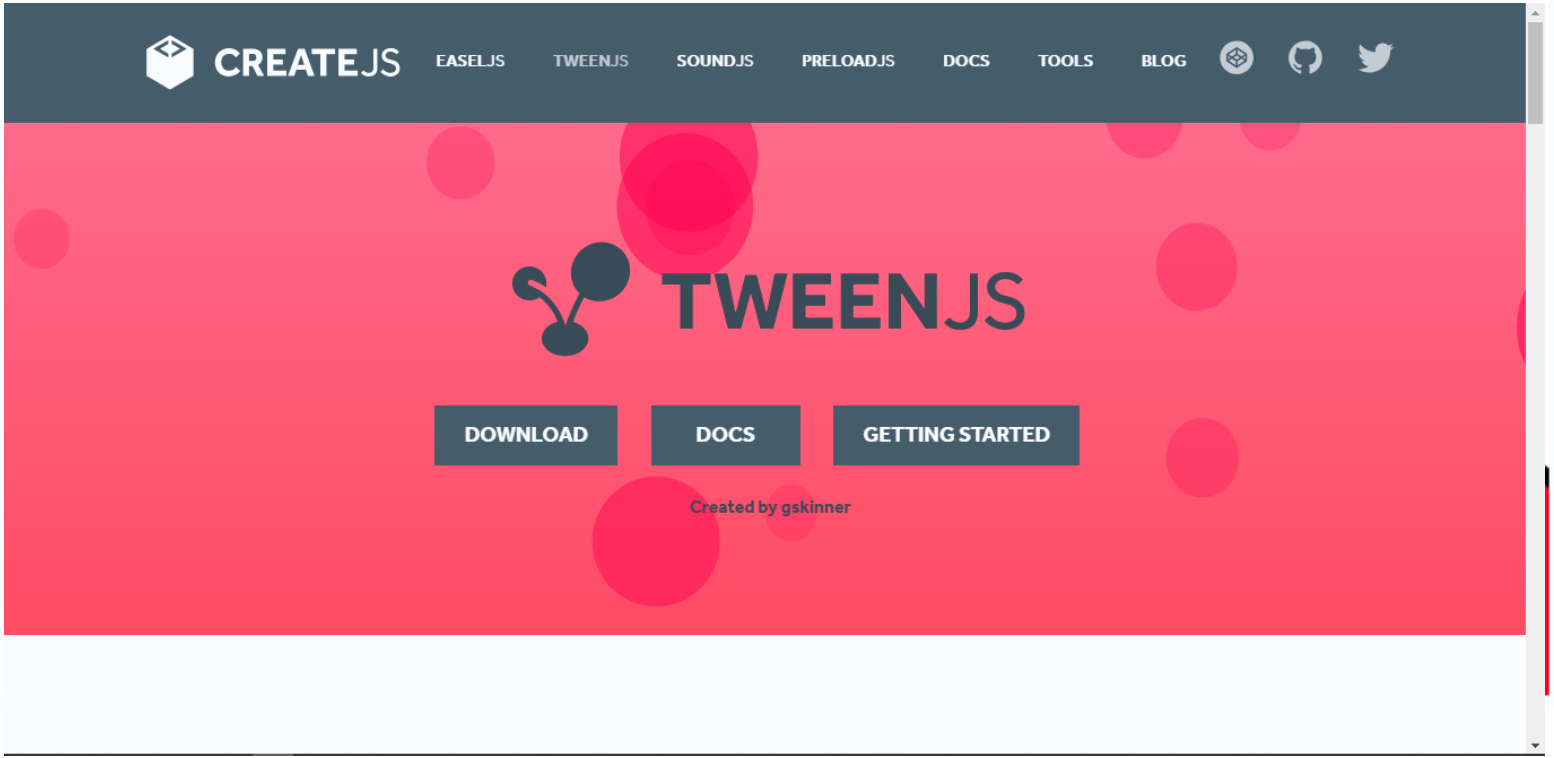
03

PART 03

第三部分

动画&交互

Tween.js



https://www.createjs.com/tweenjs

Tween.js

https://www.createjs.com/tweenjs

Paper.js: HTML5 Canvas

Paper.js

About
- FAQ
- Roadmap

Features

Examples
Showcase

Tutorials
Reference
Sketch

Download
Donation
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Follow on Twitter
Watch on Github

About

Paper.js — The Swiss Army Knife of Vector Graphics Scripting.

Paper.js is an open source vector graphics scripting framework that runs on top of the HTML5 Canvas. It offers a clean Scene Graph / Document Object Model and a lot of powerful functionality to create and work with vector graphics and bezier curves, all neatly wrapped up in a well designed, consistent and clean programming interface.

Paper.js is based on and largely compatible with Scriptographer, a scripting environment for Adobe Illustrator with an active community of scripters and more than 10 years of development.

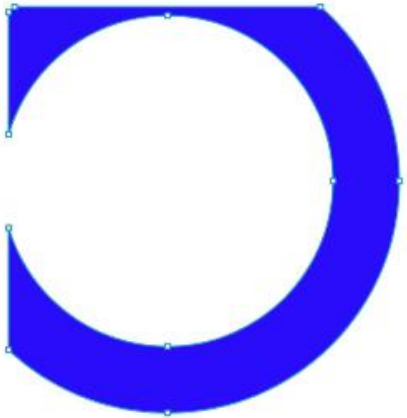
Paper.js is easy to learn for beginners and has lots to master for intermediate and advanced users.

Paper.js is developed by Jürg Lehni & Jonathan Puckey, and distributed under the permissive MIT License.

Index

http://paperjs.org/

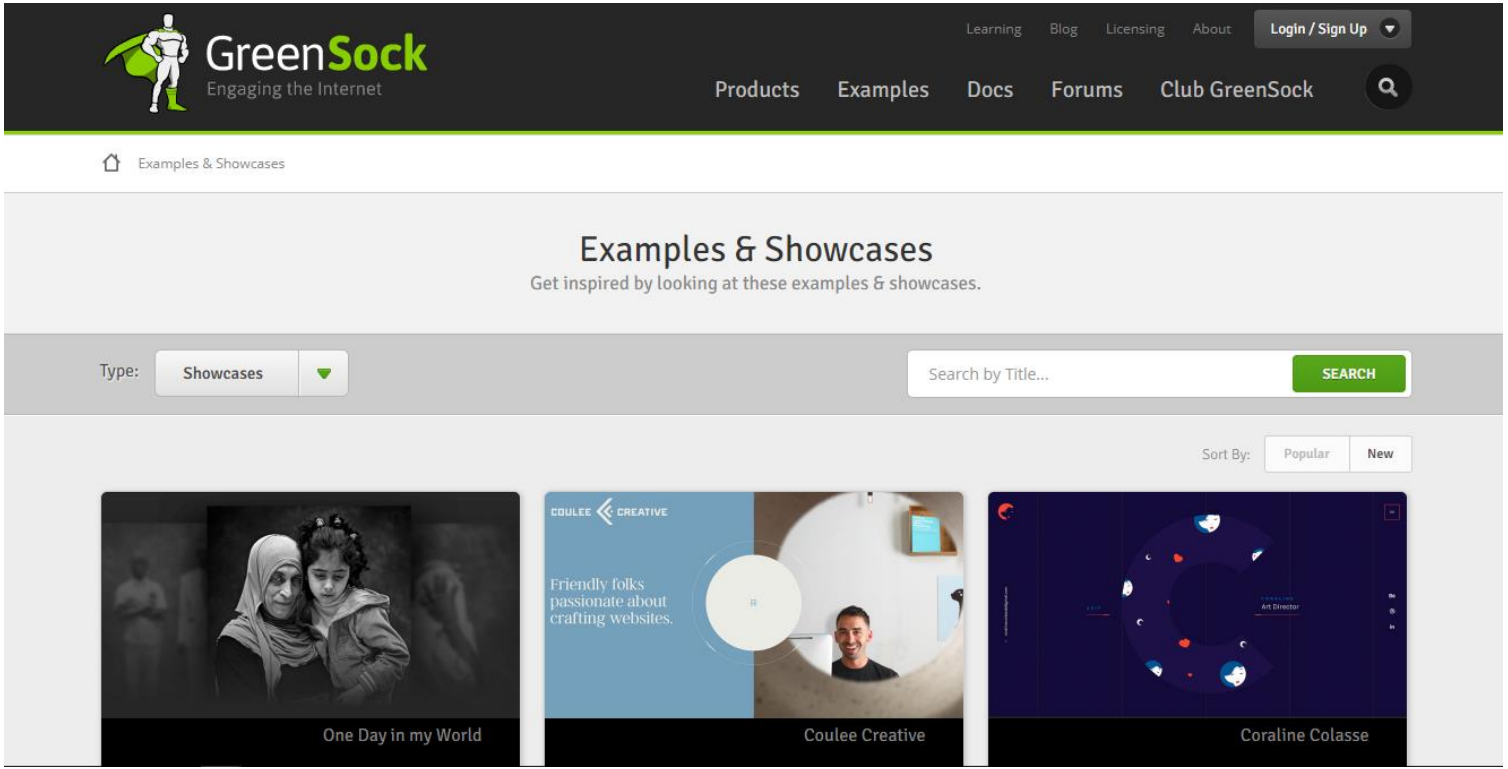
Paper.js: HTML5 Canvas



ring.intersect(square)

http://paperjs.org/

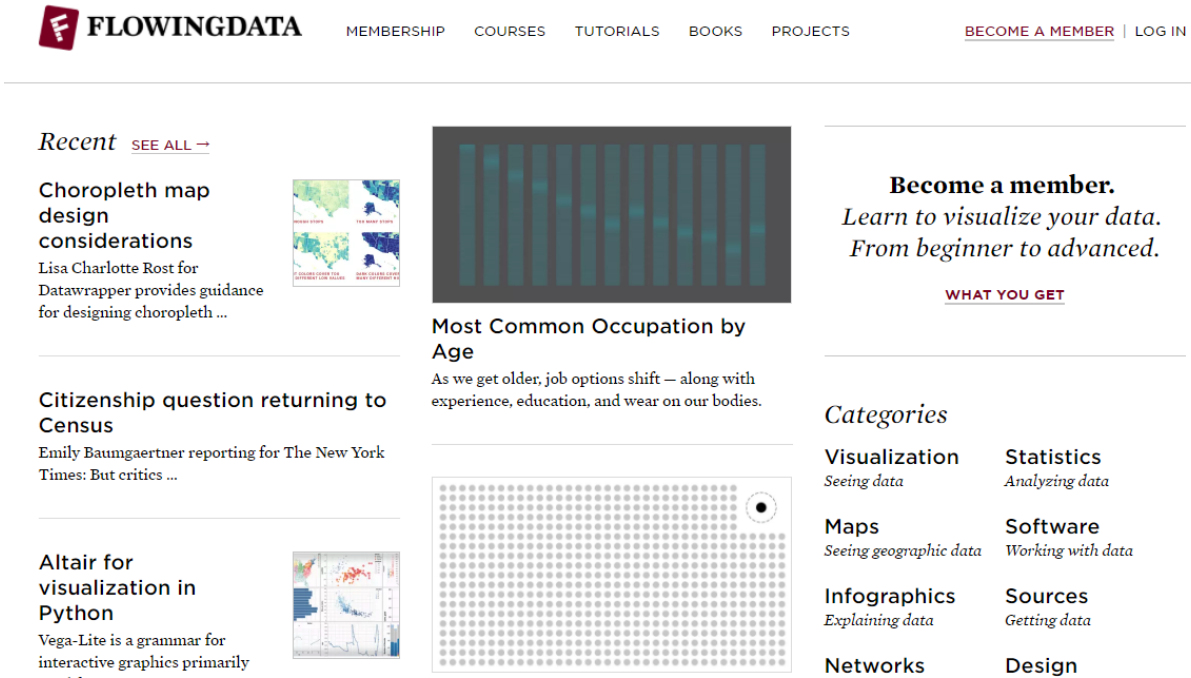
GreenSock: 动画库



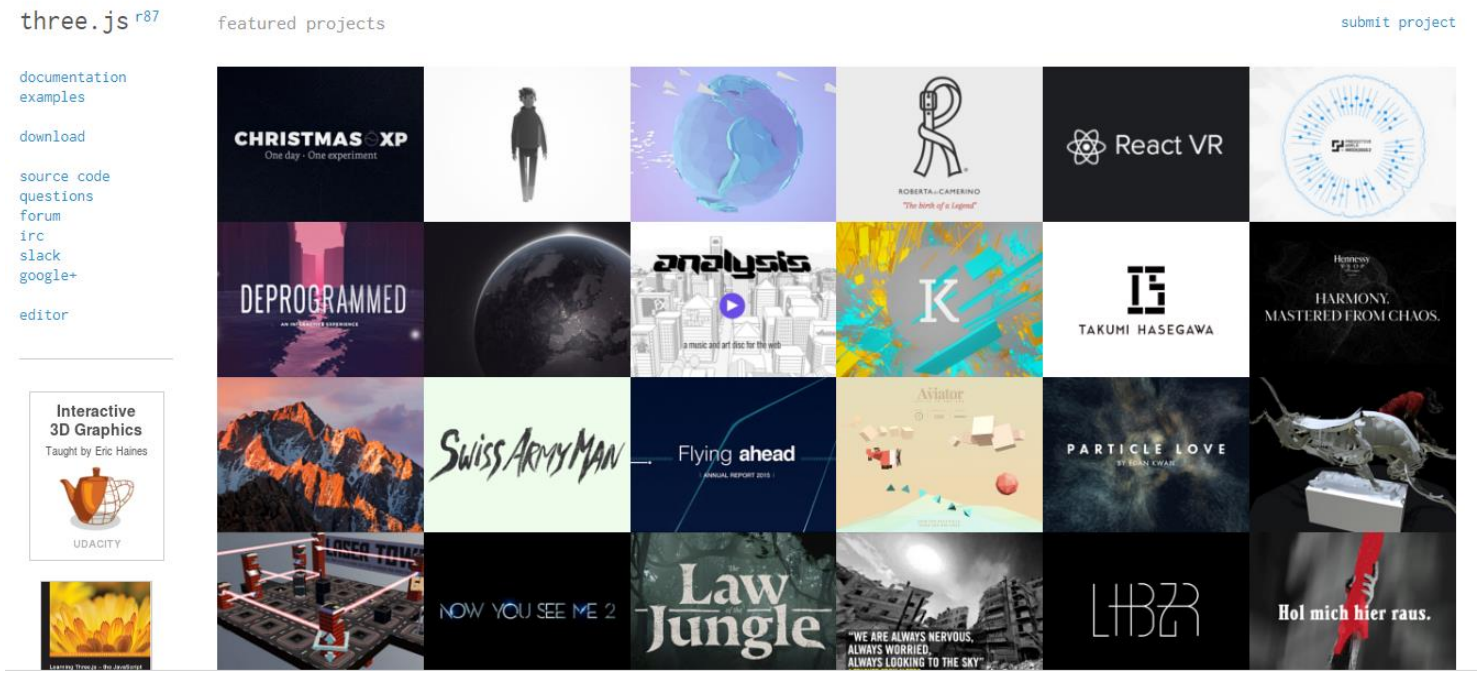
https://greensock.com/

可视化社区

- **FlowingData**
  http://flowingdata.com/



Three.js: 3D + Javascript



https://threejs.org/

04

PART 04

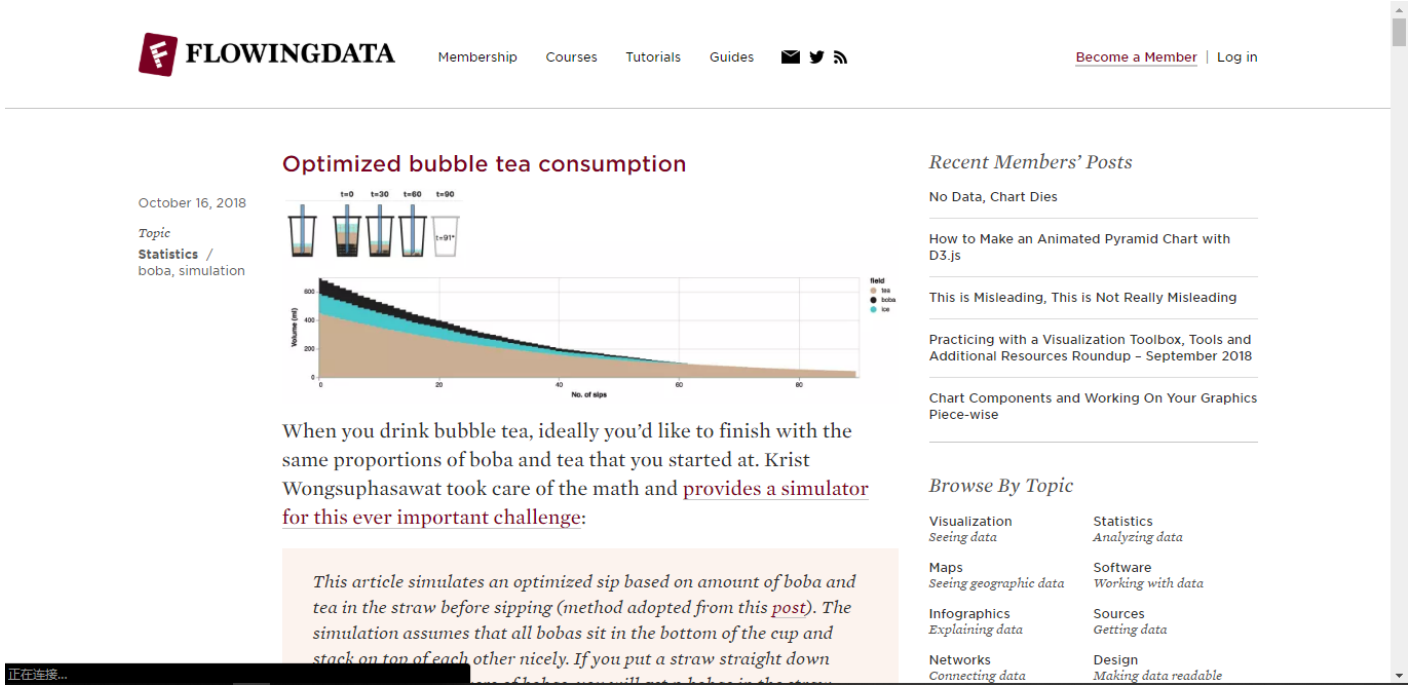
第四部分

资　　源

可视化社区

- **Flowing Data**
http://flowingdata.com/

- **Information is Beautiful**
https://informationisbeautiful.net/



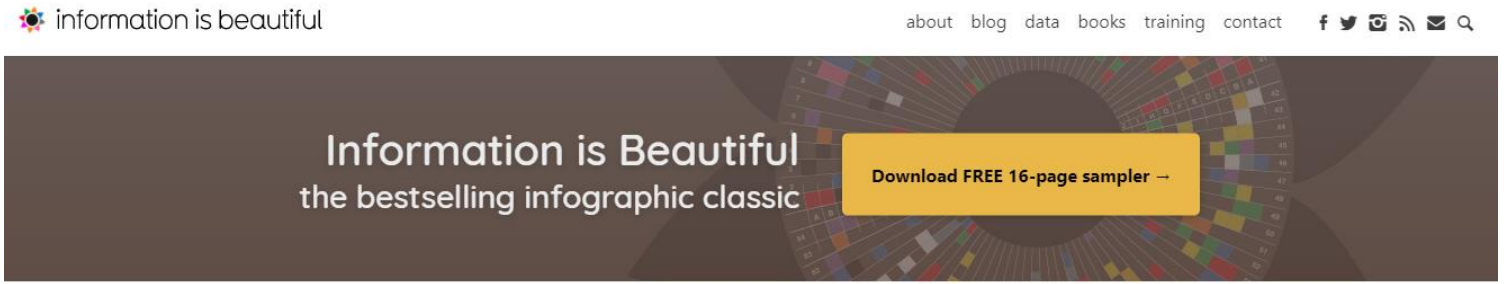
可视化社区

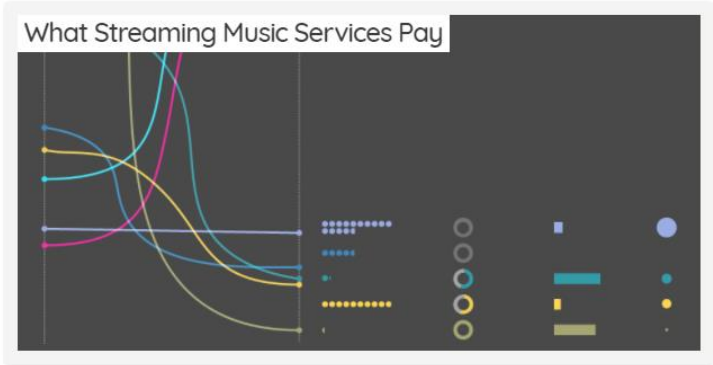
- **Flowing Data**

http://flowingdata.com/

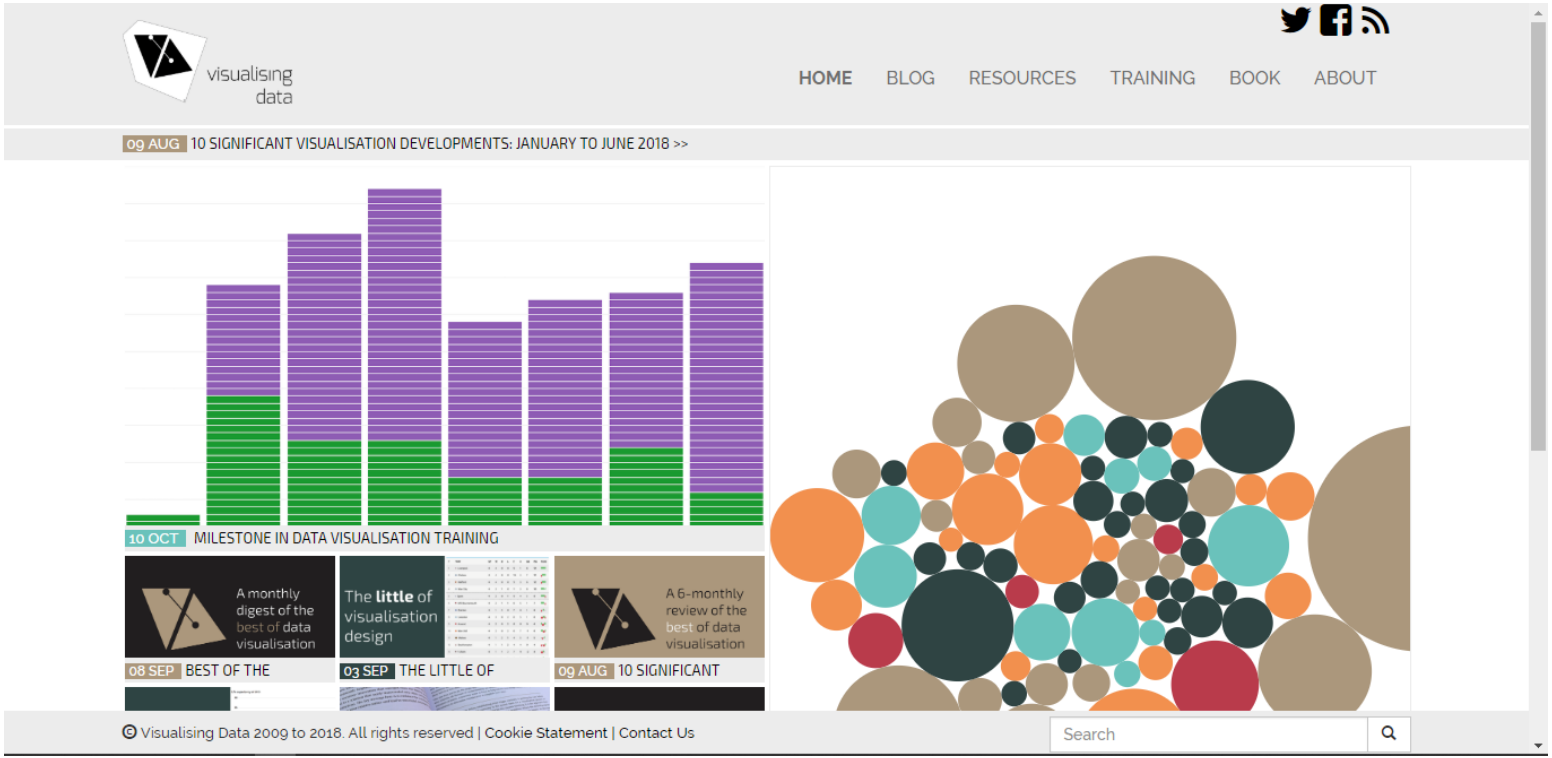
- **Information is Beautiful**

https://informationisbeautiful.net/





可视化社区：visualisingdata



http://www.visualisingdata.com/

可视化研究：三大会议

IEEE VIS **Pacific Visualization** **EUROVIS**

http://ieeevis.org/year/2018/welcome

可视化研究：三大会议

IEEE VIS **Pacific Visualization** **EUROVIS**

http://research.cbs.chula.ac.th/pvis2019/home.aspx

可视化研究：三大会议

IEEE VIS **Pacific Visualization** **EUROVIS**

// WELCOME TO EUROVIS 2019

The 21st edition of EuroVis will be organized in Porto, Portugal. The EuroVis 2019 will be hosted by the GPCG, the Portuguese chapter of Eurographics, in association with INESC-ID Lisboa and INESC-TEC. EuroVis is the annual Visualization Conference organized by the Eurographics Working Group on Data Visualization and supported by the IEEE Visualization and Graphics Technical Committee (IEEE VGTC). It has been a Eurographics and IEEE co-supported international visualization symposium held in Europe annually since 1999, has a conference since 2012.

https://www.eurovis.org/

可视化研究：ChinaVis

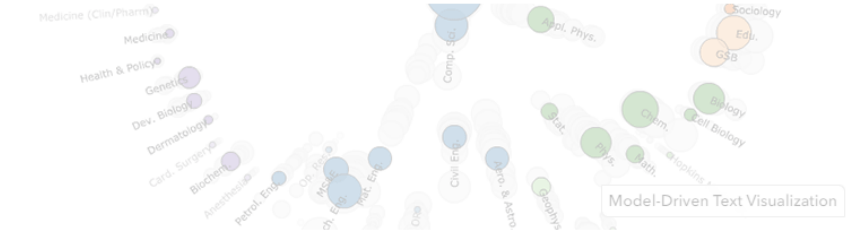
http://www.chinavis.org/2018/

可视化实验室：华盛顿大学

ABOUT
PEOPLE
PAPERS
VIDEO
CODE
BLOG

UW Interactive Data Lab VISUALIZATION + ANALYSIS

OUR MISSION is to enhance people's ability to **understand and communicate data** through the design of new **interactive systems** for data visualization and analysis.



RECENT PUBLICATIONS (VIEW ALL PAPERS)

VIS 2018 - Berlin, Germany

Formalizing Visualization Design Knowledge as Constraints: Actionable and Extensible Models in Draco Dominik Moritz, Chenglong Wang, Gregory Nelson, Halden Lin, Adam M. Smith, Bill Howe, Jeffrey Heer *IEEE Trans. Visualization & Comp. Graphics (Proc. InfoVis)*, 2019
PDF | Software | **Best Paper Award**

Hypothetical Outcome Plots Help Untrained Observers Judge Trends in Ambiguous Data Alex Kale, Francis Nguyen, Matthew Kay, Jessica Hullman *IEEE Trans. Visualization & Comp. Graphics (Proc. InfoVis)*, 2019
PDF | Data

UPDATES

16 Aug 2018
Three new papers at VIS'18, including an **InfoVis Best Paper Award for Draco**!

15 Aug 2018
Catch our paper on the **Idyll language for interactive articles** at ACM UIST 2018!

10 May 2018
EuroVis'18 papers on **SetCoLa for custom graph layout** and **the effects of task and data on visual encoding effectiveness**.

http://idl.cs.washington.edu/

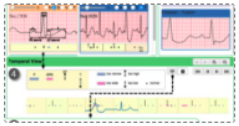
可视化实验室：香港科技大学

HKUST VIS

HOME PEOPLE PUBLICATIONS AWARDS PHOTOS CONTACT

Welcome to HKUST VisLab, a multidisciplinary group aiming at improving the visual analysis and various visualizations.

2018



ECGLens: Interactive Visual Exploration of Large Scale ECG Data for Arrhythmia Detection

Ke Xu, Shunan Guo, Nan Cao, David Gotz, Aiwen Xu, Huamin Qu, Zhenjie Yao, Yixin Chen,

ACM CHI 2018

Links: [url] [pdf]

InfoNice: Easy Creation of Information Graphics

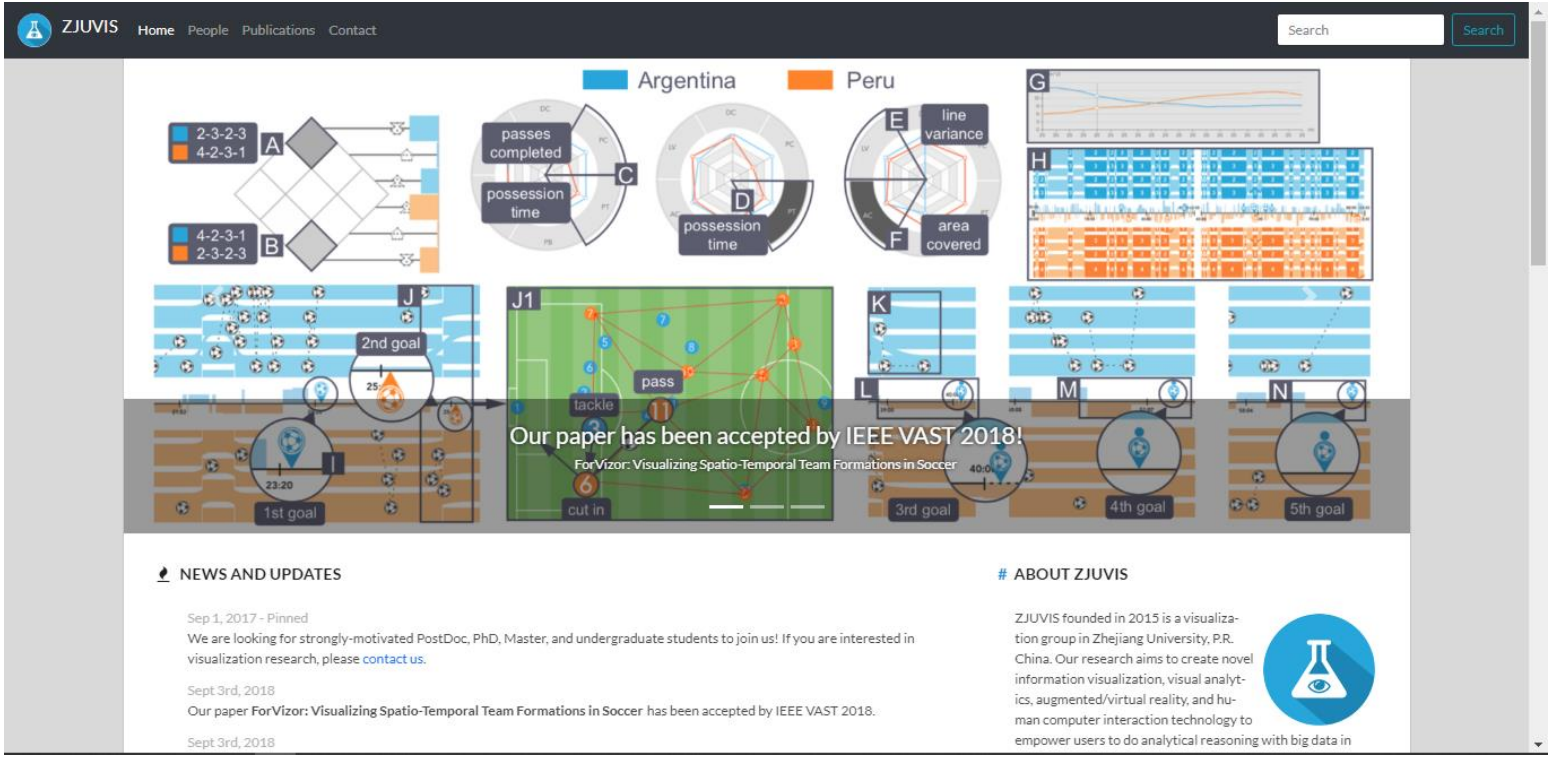
Yun Wang, Haidong Zhang, He Huang, Xi Chen, Qiufeng Yin, Zhitao Hou, Dongmei Zhang, Qiong Luo, Huamin Qu,

ACM CHI 2018

Links: [url] [pdf]

http://vis.cse.ust.hk/

可视化实验室：浙江大学



http://www.cad.zju.edu.cn/english.html

可视化实验室：北京大学

http://vis.pku.edu.cn/blog/

可视化实验室：同济大学

智能大数据可视化实验室

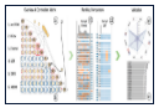
Intelligent Big Data Visualization Lab (iDV^{X})

HOME PROJECTS PUBLICATIONS TEACHING MEMBERS TALKS NEWS

2018

Shunan Guo, **Zhuochen Jin**, David Gotz, Fan Du, Hongyuan Zha, **Nan Cao**
Visual Progression Analysis of Event Sequence Data
IEEE TVCG (IEEE VAST 2018)

paper | video



Ke Xu, Meng Xia, Xing Mu, Yun Wang, **Nan Cao**
EnsembleLens: Ensemble-based Visual Exploration of Anomaly Detection Algorithms with Multidimensional Data
IEEE TVCG (IEEE VAST 2018)

paper | video

Wenchao Wu, Yixian Zheng, Kaiyuan Chen, Xiangyu Wang, **Nan Cao**
A Visual Analytics Approach for Equipment Condition Monitoring in Smart Factories of Process Industry
IEEE PacificVis 2018

paper

https://idvxlab.github.io/index.html

可视化实验室：四川大学

http://scuvis.org/

谢 谢

可视化工具及平台分享

梁　晶
jing.liang@scuvis.org

2018年10月17日