Visualization examples

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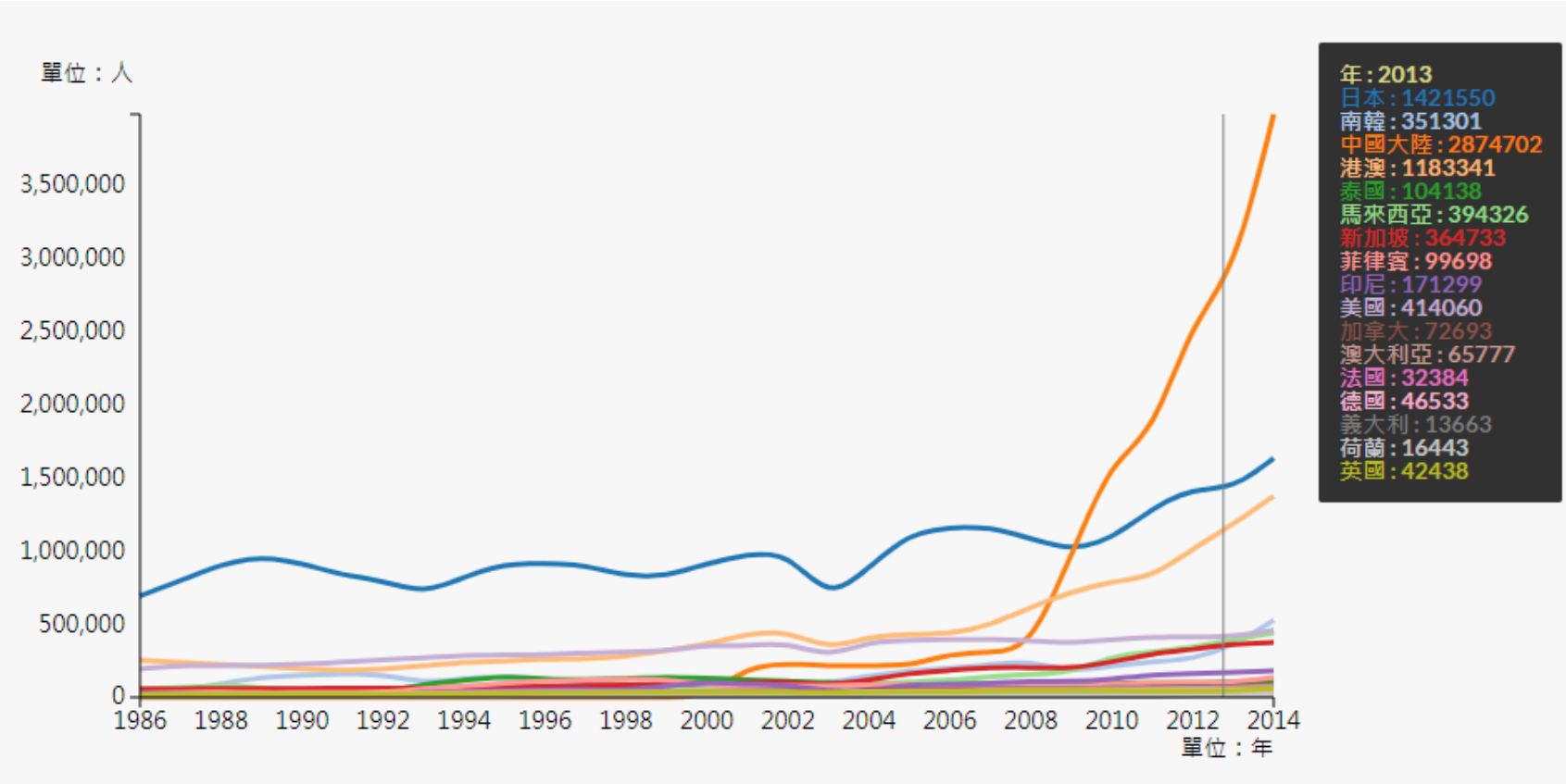
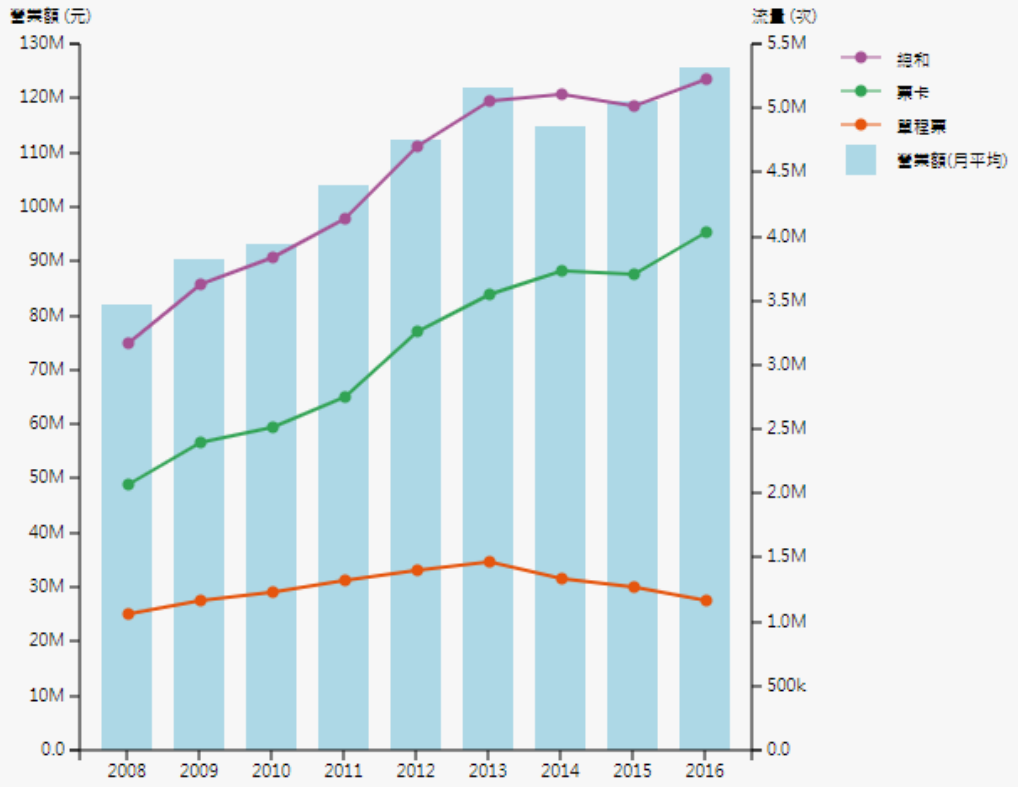
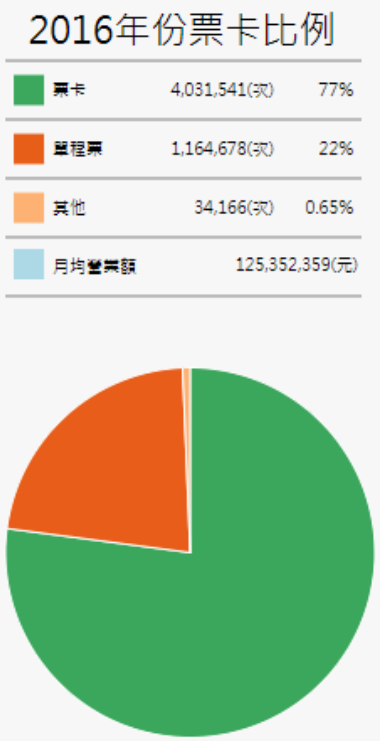
(Too) Simple Datasets

近年台灣旅客統計
Visitors from different countries



高雄捷運月均營業額及票種分析
Analysis of the Kaohsiung MRT's Average Monthly Revenue and Ticket Types



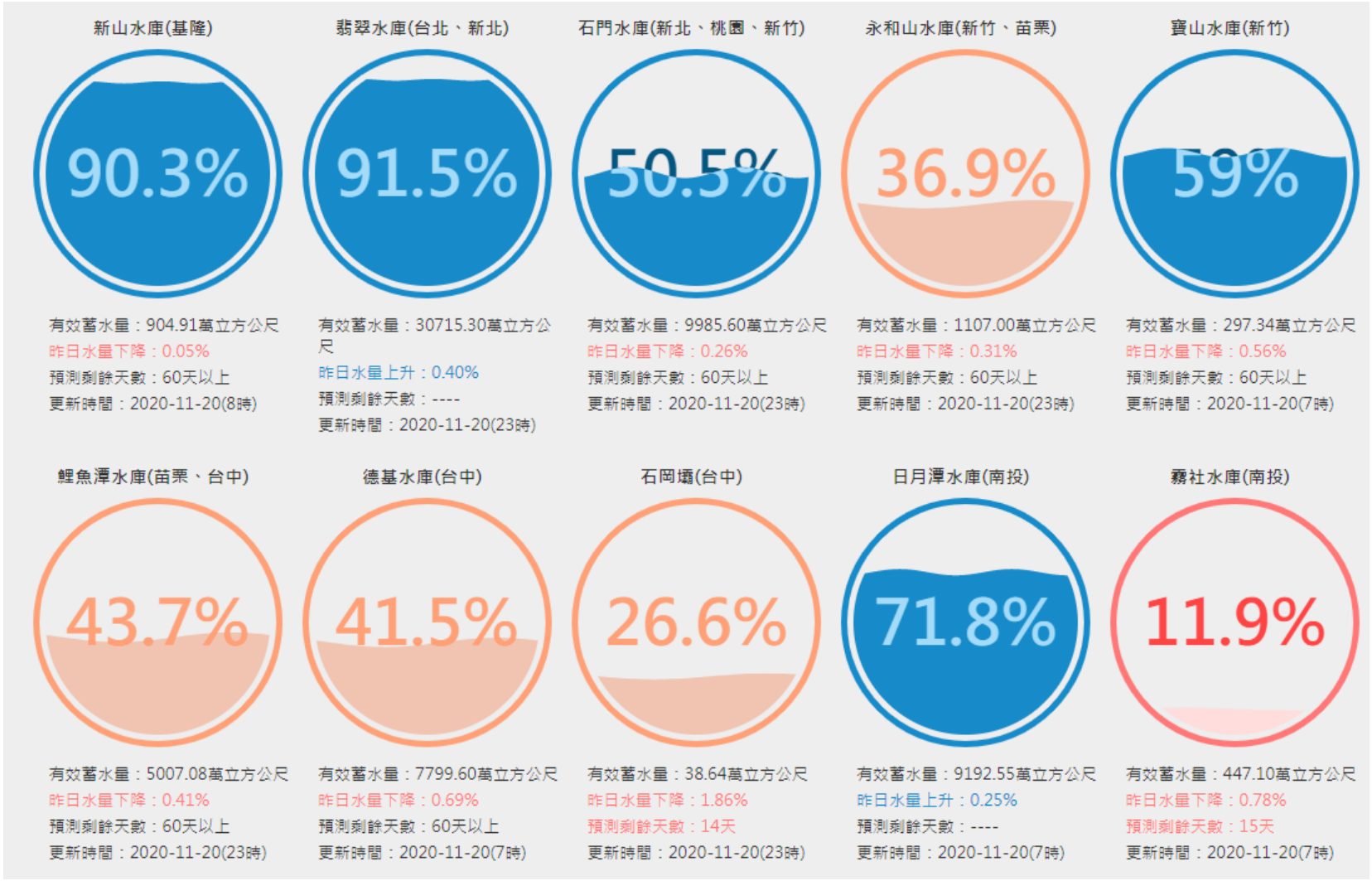


※表列其他係差異旅次、腳踏車票、一日卡、團體票、TM卡等

※票卡為各家公司發行票種，包含一卡通、愛金卡以及遠鑫卡(並在2016年7月後加入悠遊卡)

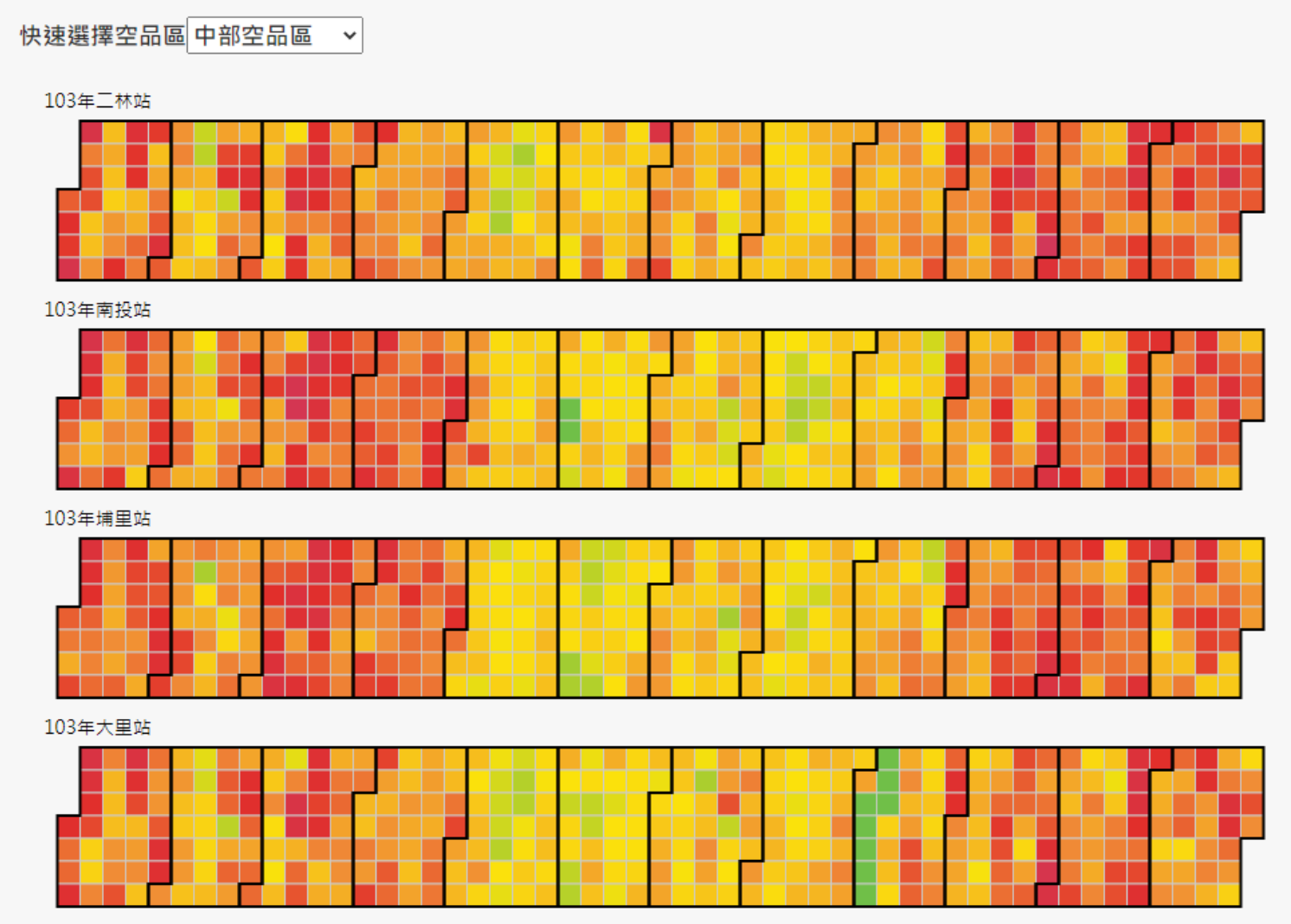
※點選圓餅圖得知當月更多資料詳情! (點擊第二次取消選取)

台灣水庫即時水情
Real-time Reservoir Water Conditions in Taiwan

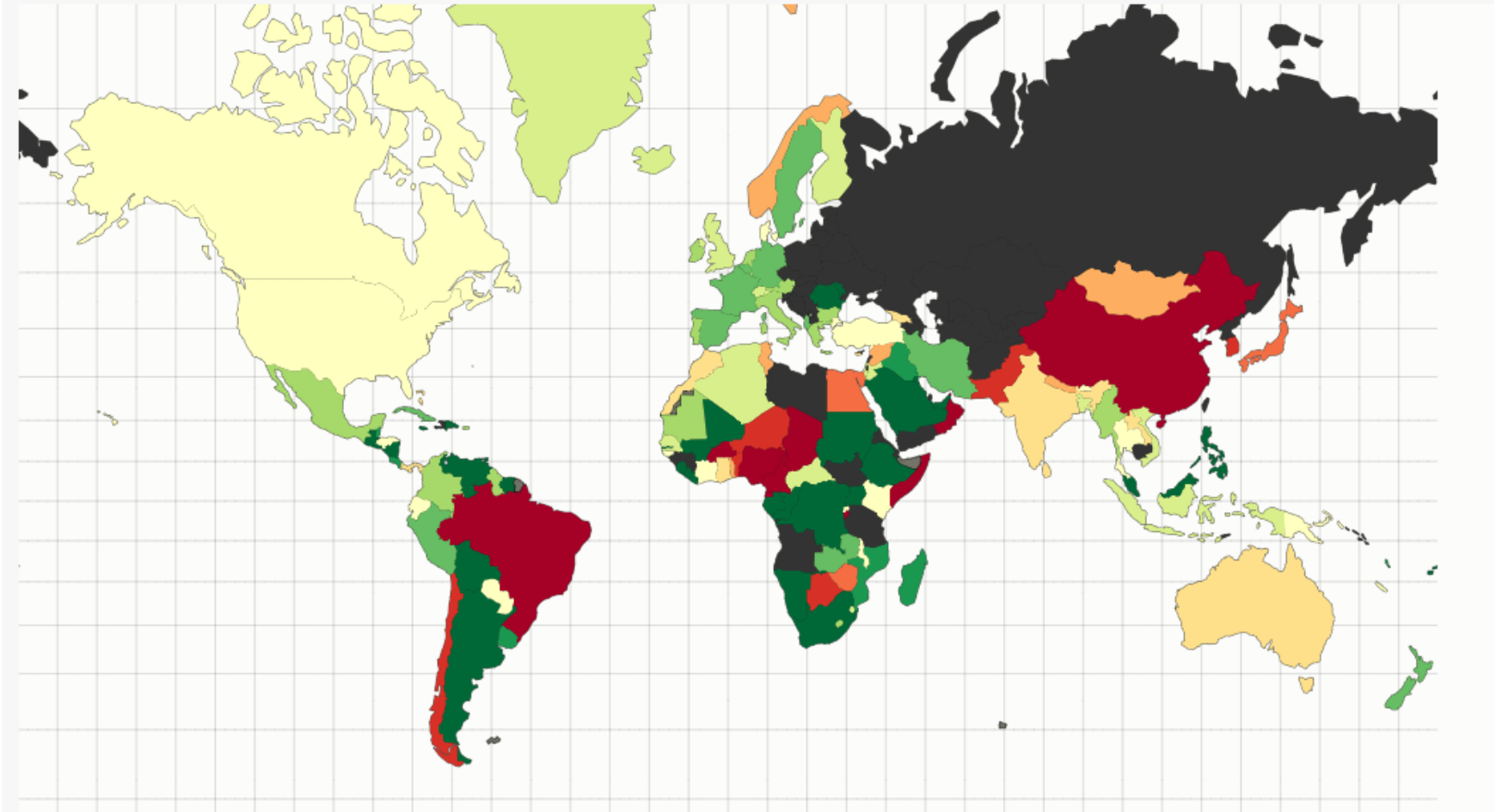


Raw Data Visualization

PM 2.5 2014 年各觀測站資料
PM 2.5 in Various Cities in 2014

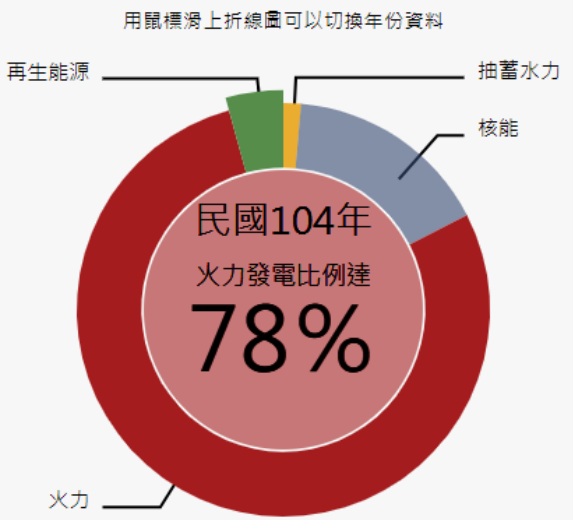


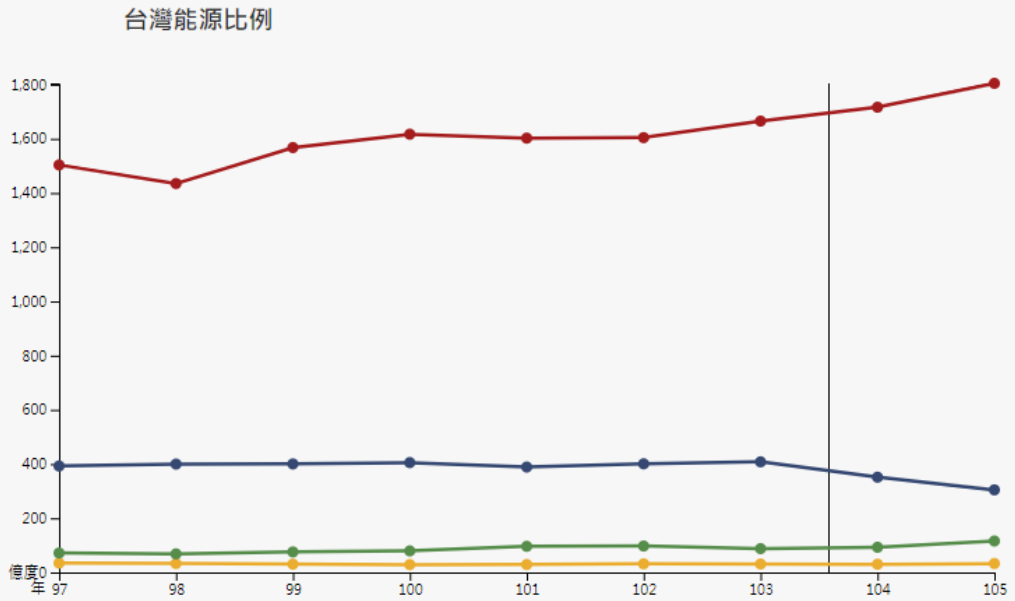
世界 GDP 動態成長率變遷
Change of World GDP Growth Rate



Integrated Views

台灣近年再生能源發展趨勢
Recent Trends in Renewable Energy Development in Taiwan





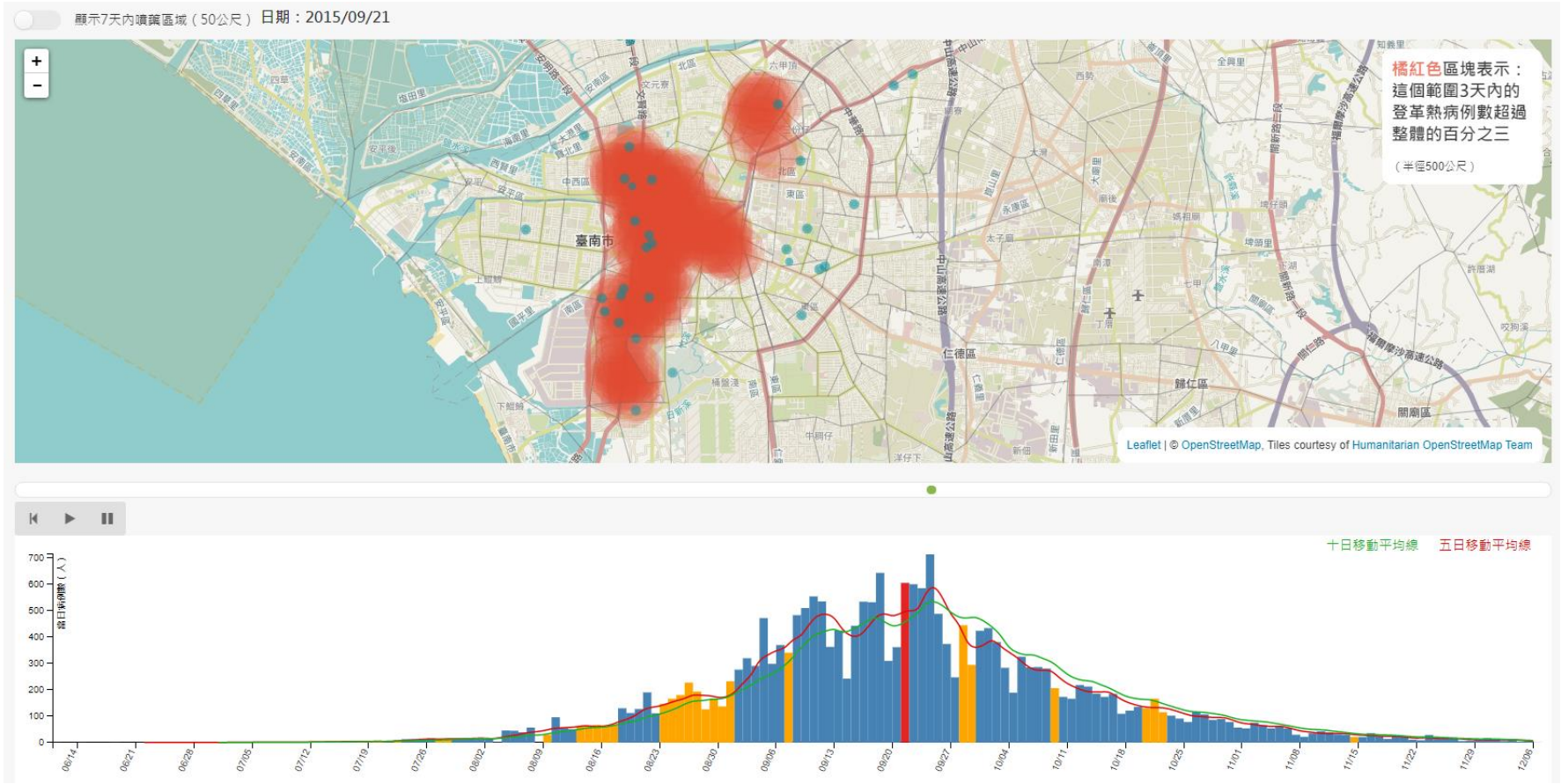
火力：1716億度

核能：351億度

抽蓄水力：30億度

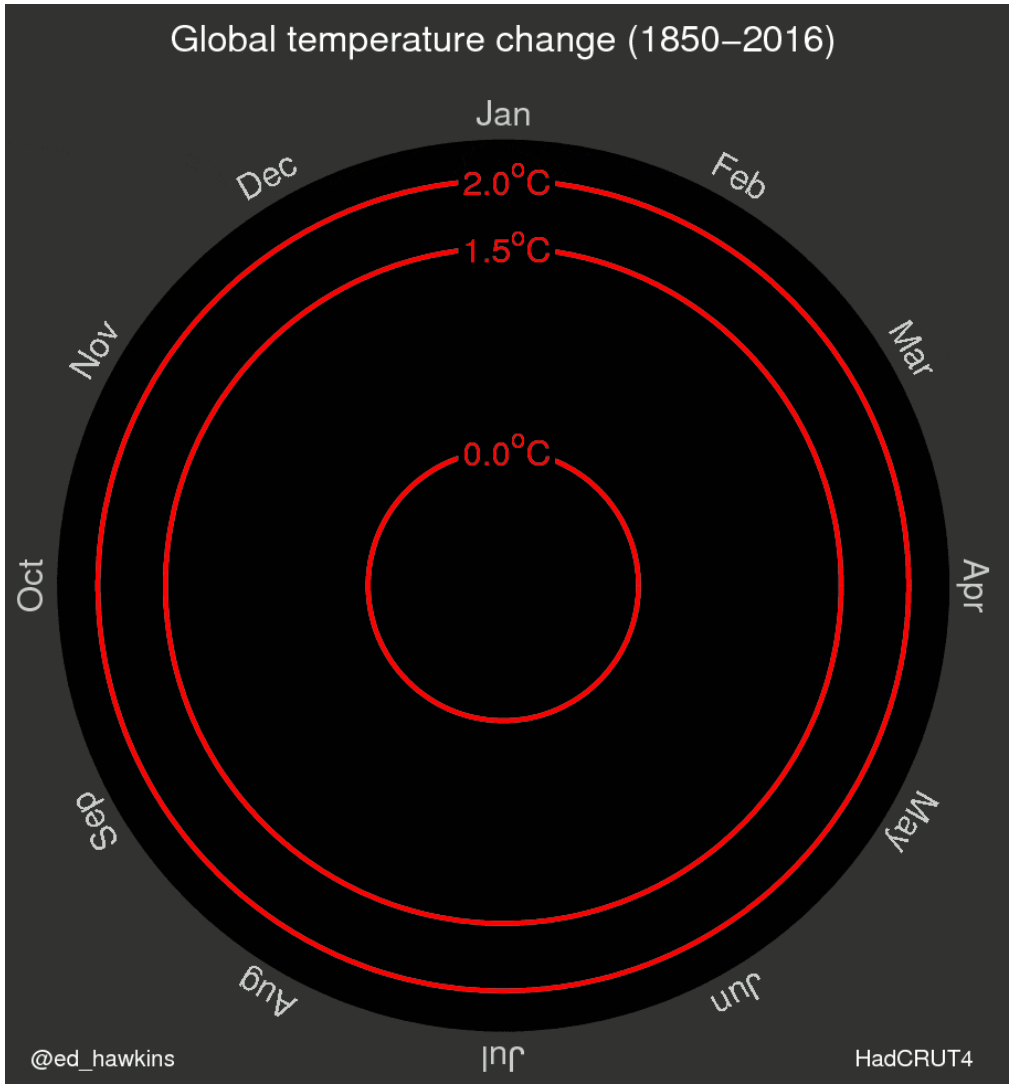
再生能源：93億度

2015台南登革熱-熱區變遷地圖
2015 Tainan Dengue Fever - Hot Zone Transition Map



Simple but Convincing Views

Spiralling global temperatures



1877-78:
strong El Nino event warms global temperatures

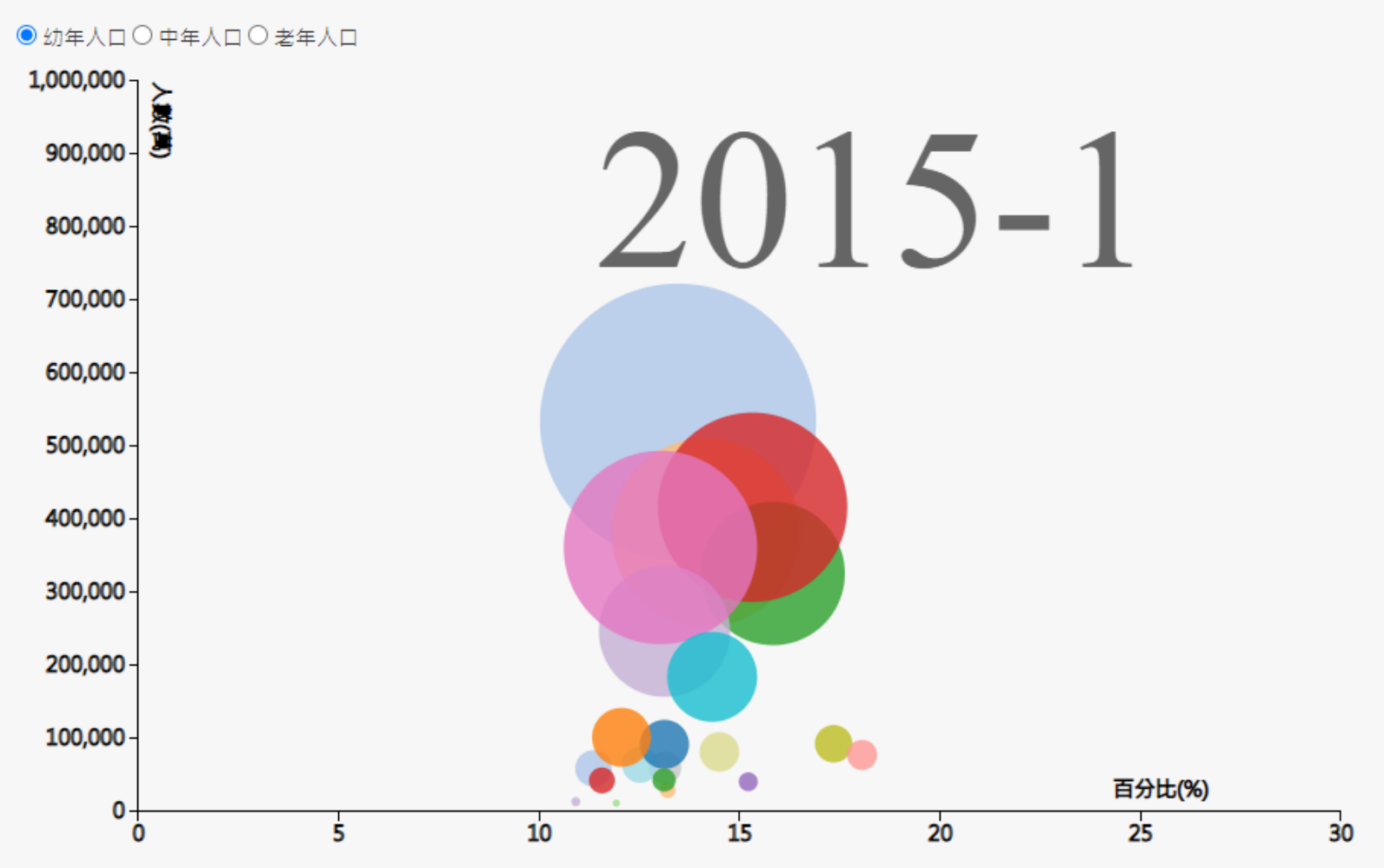
1880s-1910:
small cooling, partially due to volcanic eruptions

1910-1940s:
warming, partially due to recovery from volcanic eruptions, small increase in solar output and natural variability

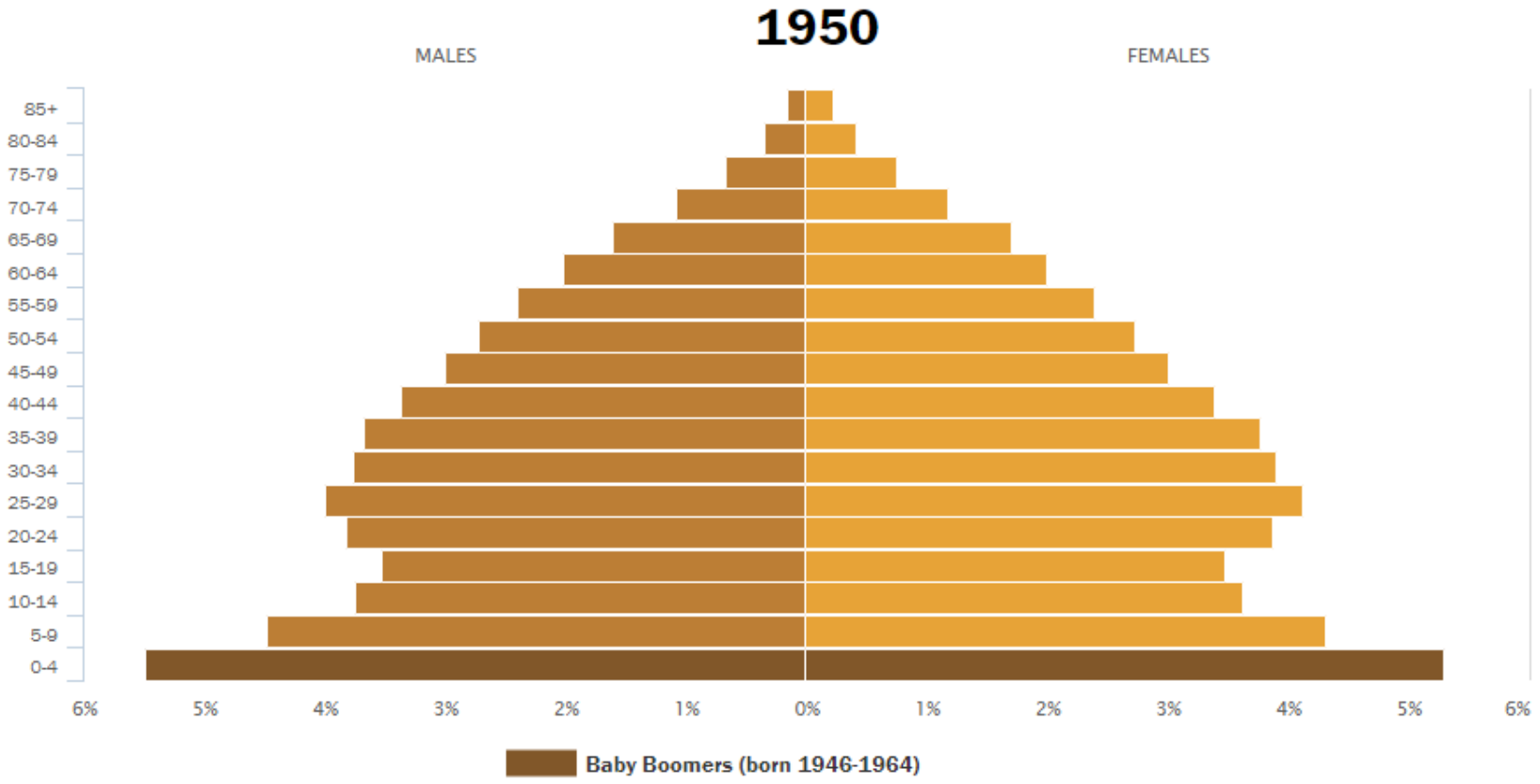
1950s-1970s:
fairly flat temperatures as cooling sulphate aerosols mask the greenhouse gas warming

1980-now:
strong warming, with temperatures pushed higher in 1998 and 2016 due to strong El Nino events

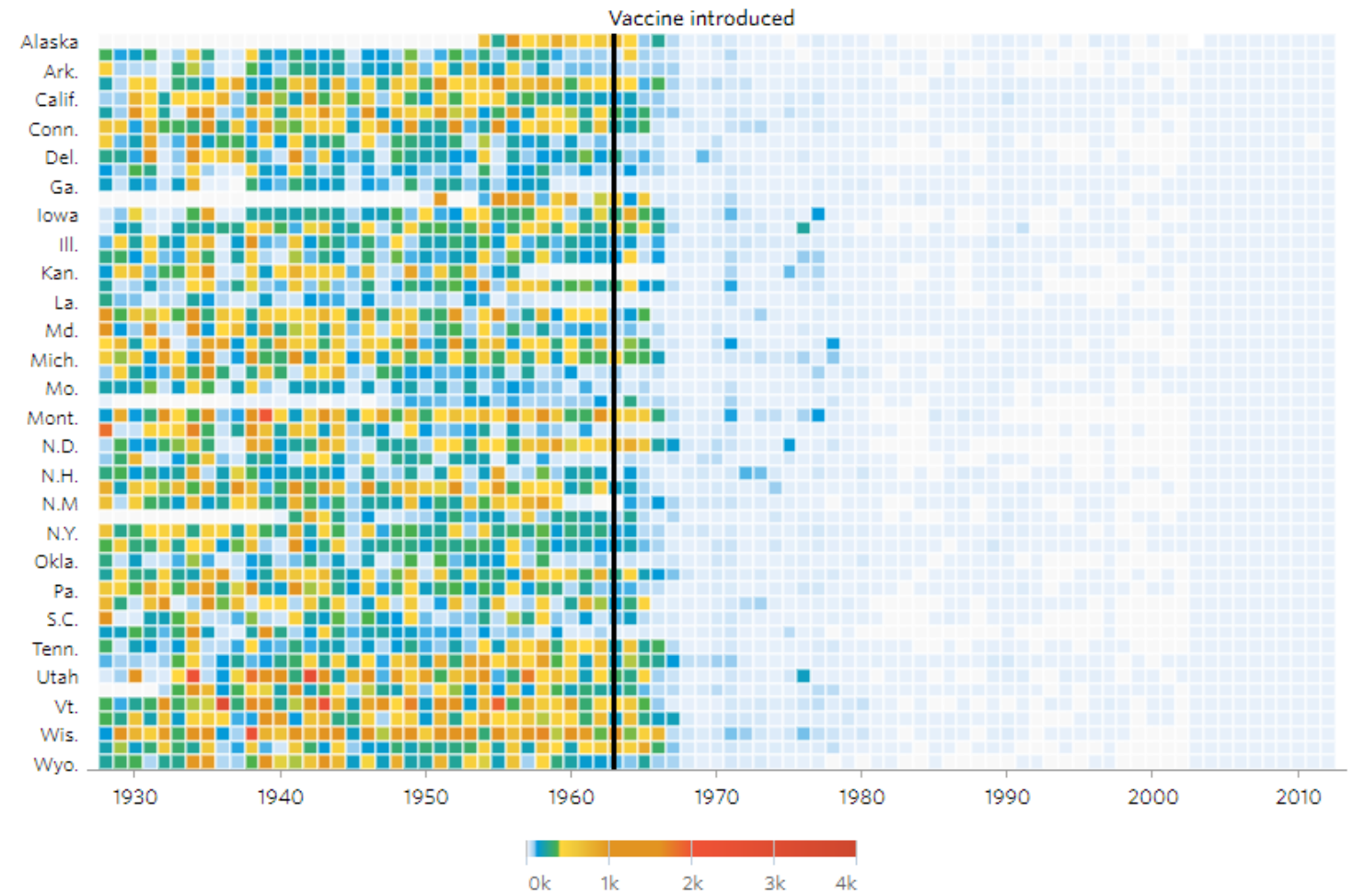
1992 - 2015 年台灣人口變化趨勢



Percent of U.S. Population by Age Group



The Impact of Vaccines



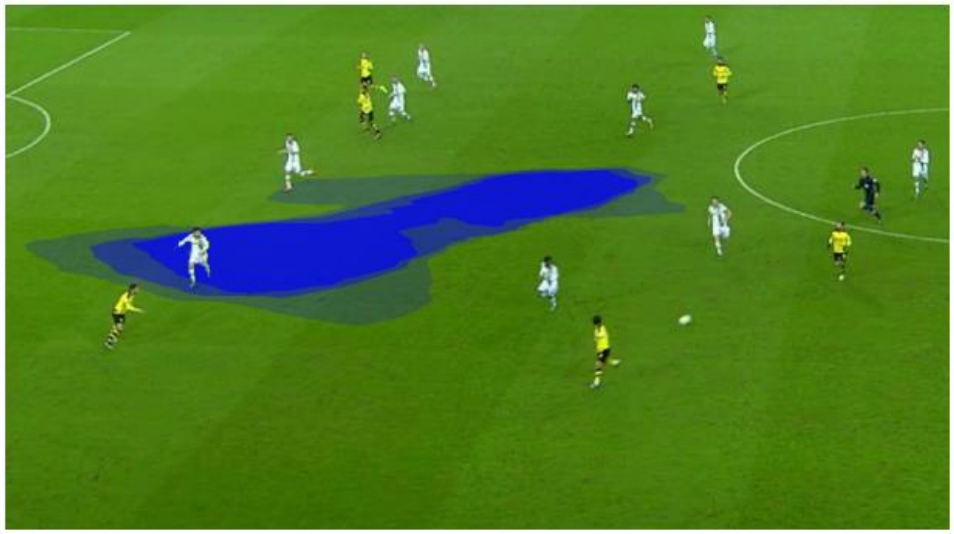
Visualization for entertainment

Bring it to the Pitch: Combining Video and Movement Data to Enhance Team Sport Analysis

interaction spaces

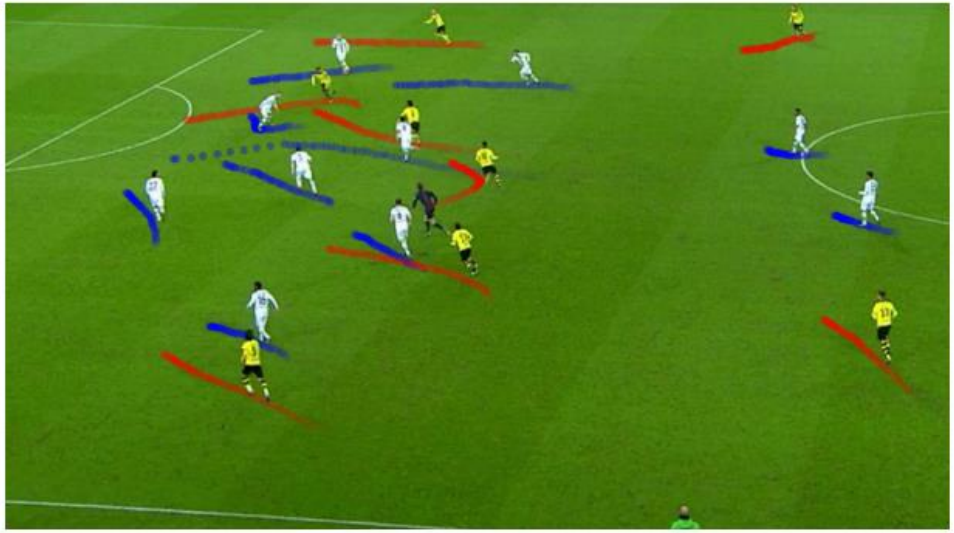
free spaces

M. Stein *et al*., "Bring it to the Pitch: Combining Video and Movement Data to Enhance Team Sport Analysis," in *IEEE Transactions on Visualization and Computer Graphics*, 2017



(a) Dominant Regions

(b) Pass Distances



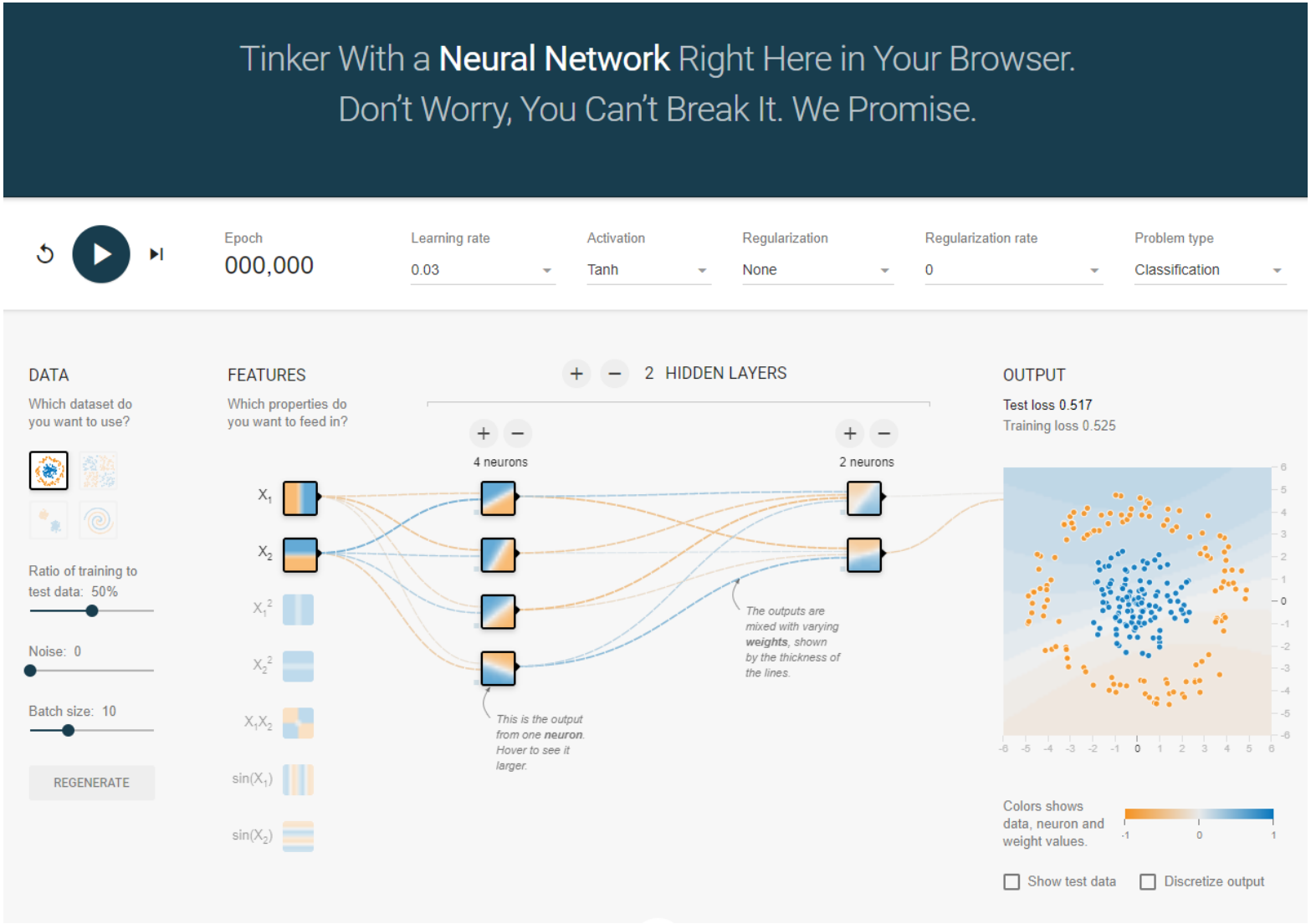
(c) Player Movement

(d) Player Reactions

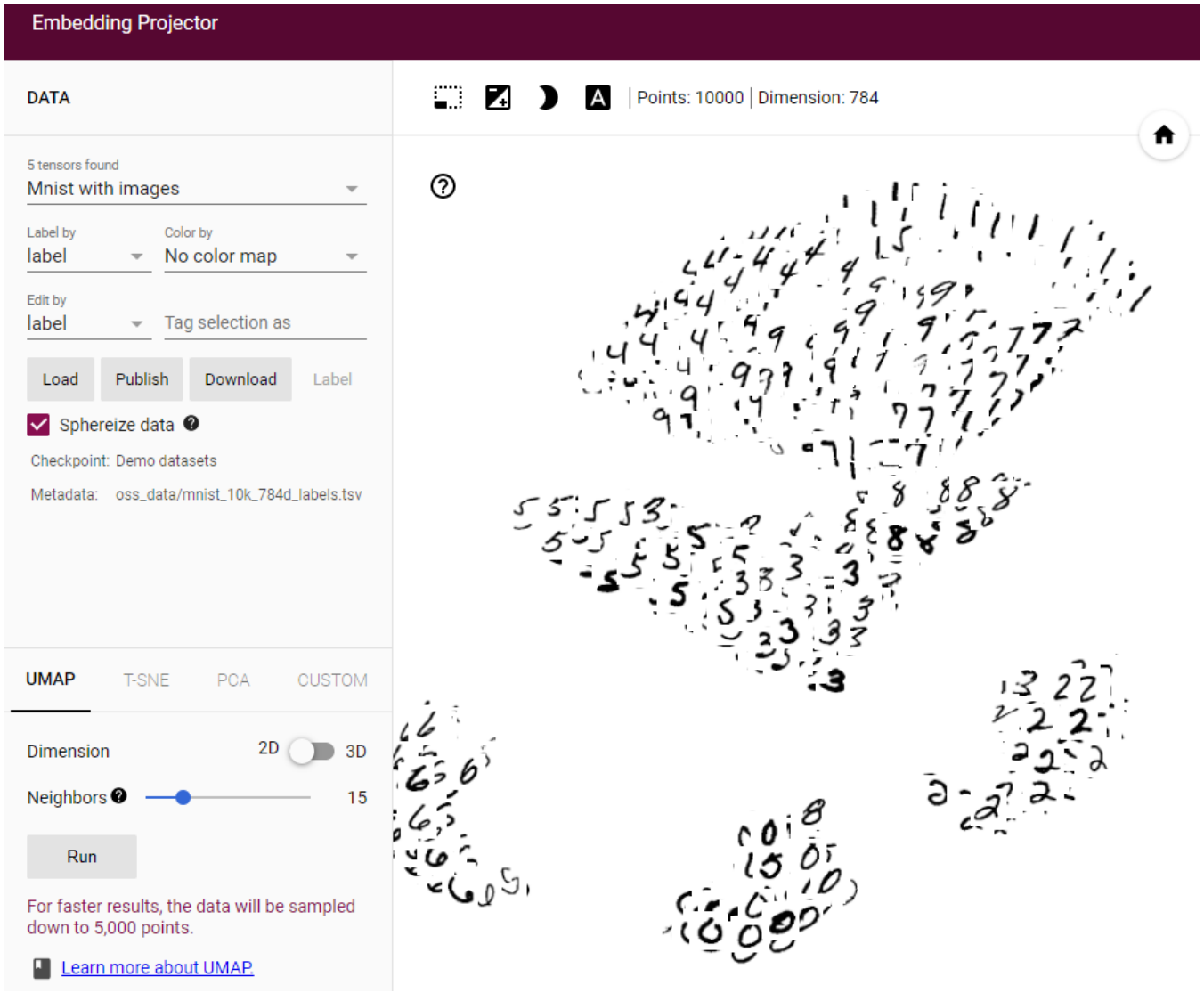
M. Stein *et al*., "Bring it to the Pitch: Combining Video and Movement Data to Enhance Team Sport Analysis," in *IEEE Transactions on Visualization and Computer Graphics*, 2017

Interactive Systems

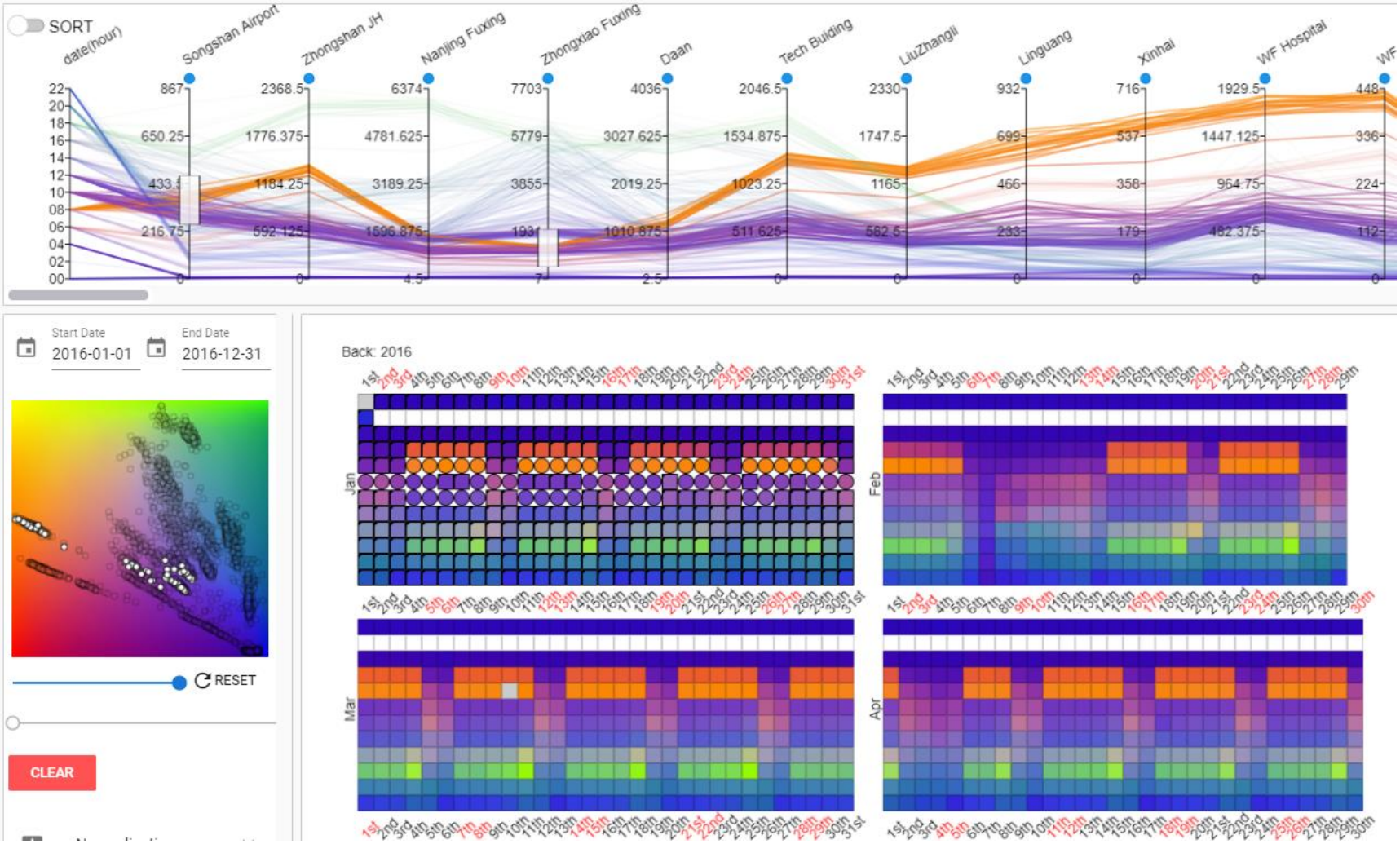
Tensorflow Playground



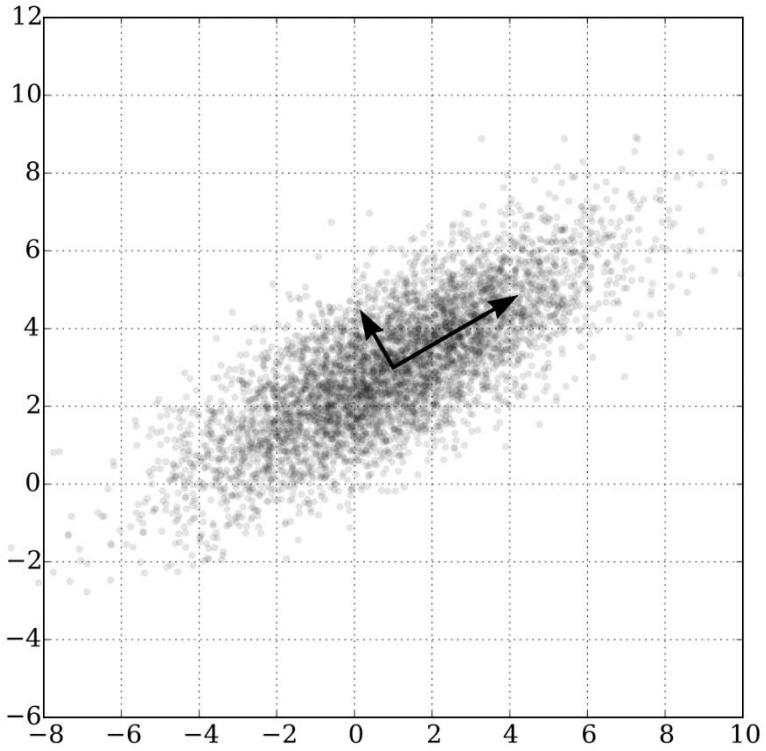
Embedding Projector



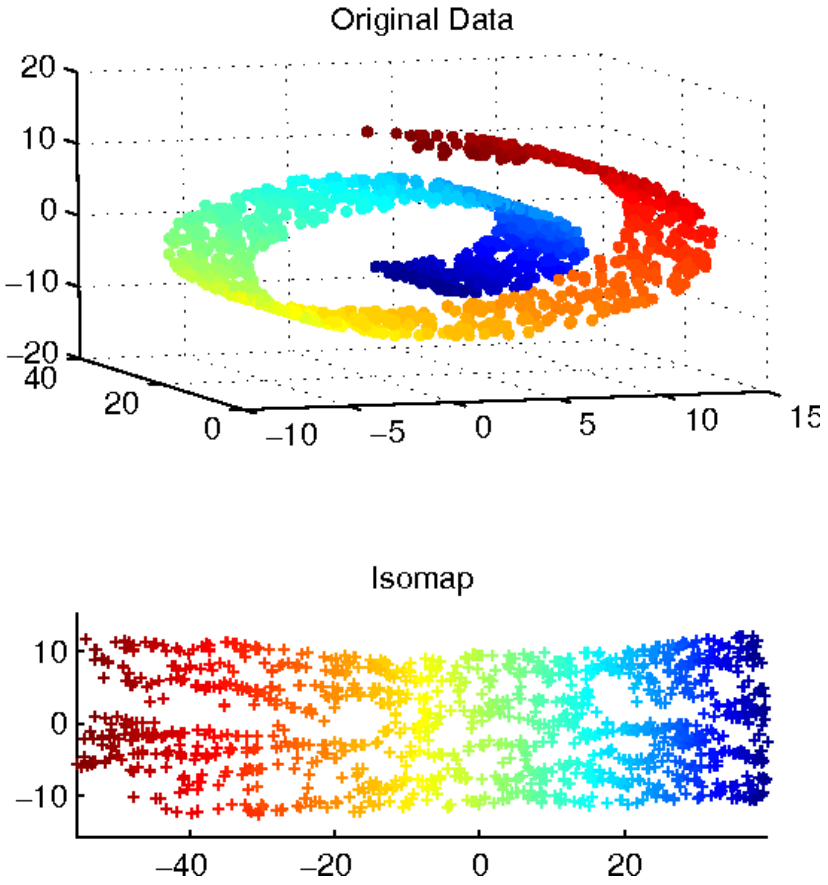
Time Series Multivariate Data Visualization



Dimension Reduction



Principal component analysis



Algorithms for manifold learning

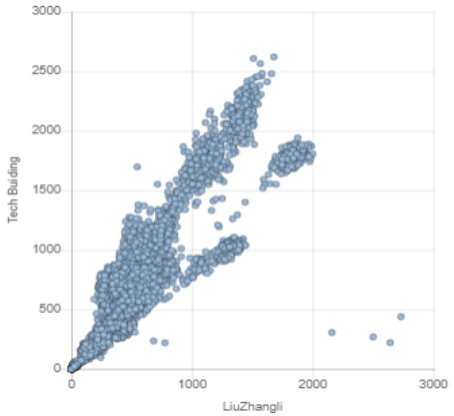
Color Mapping & Dimension Relations

Covariance matrix & Scatter plots

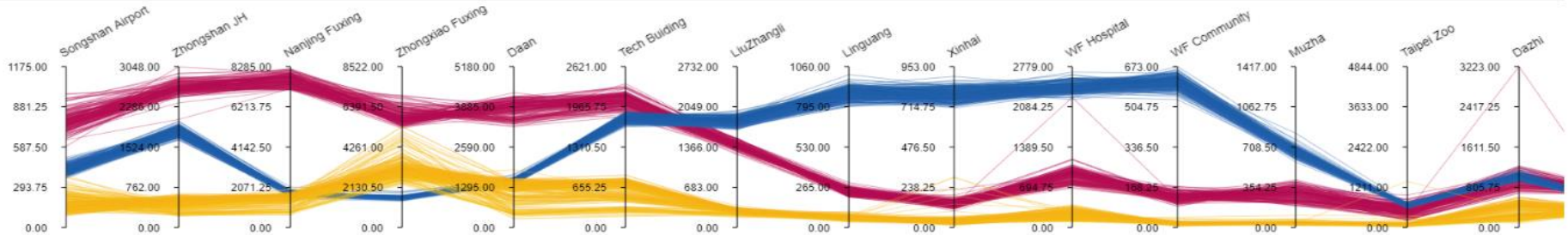
Max

Min

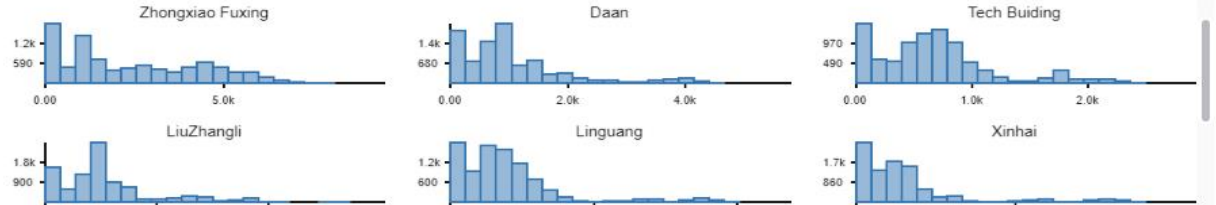
	Songs	Zhong	Nanjin	Zhong	Daan	Tech B	LiuZha	Lingua	Xinhai	WF Ho	WF Co	Muzha	Taipei	Dazhi	Jianna	Xihu	Gangq	Wende	Neihu	Dahu F	Huzhoi
Songshan Airport	1.000	0.837	0.799	0.681	0.821	0.863	0.726	0.415	0.362	0.627	0.372	0.610	0.597	0.819	0.714	0.727	0.773	0.694	0.518	0.490	0.614
Zhongshan JH	0.837	1.000	0.873	0.593	0.831	0.961	0.901	0.589	0.546	0.743	0.557	0.637	0.390	0.834	0.685	0.856	0.919	0.737	0.664	0.575	0.749
Nanjing Fuxing	0.799	0.873	1.000	0.769	0.906	0.850	0.624	0.152	0.104	0.405	0.114	0.358	0.291	0.722	0.724	0.953	0.939	0.503	0.250	0.171	0.390
Zhongxiao Fuxing	0.681	0.593	0.769	1.000	0.726	0.634	0.371	-0.003	-0.058	0.201	-0.057	0.191	0.433	0.580	0.859	0.599	0.577	0.322	0.111	0.095	0.152
Daan	0.821	0.831	0.906	0.726	1.000	0.888	0.678	0.243	0.220	0.550	0.217	0.586	0.413	0.866	0.720	0.831	0.879	0.709	0.352	0.280	0.512
Tech Buiding	0.863	0.961	0.850	0.634	0.888	1.000	0.898	0.579	0.551	0.786	0.555	0.706	0.458	0.926	0.716	0.795	0.875	0.810	0.665	0.580	0.767
LiuZhangli	0.726	0.901	0.624	0.371	0.678	0.898	1.000	0.837	0.814	0.909	0.822	0.803	0.412	0.831	0.587	0.609	0.737	0.858	0.878	0.793	0.928
Linguang	0.415	0.589	0.152	-0.003	0.243	0.579	0.837	1.000	0.958	0.867	0.969	0.748	0.367	0.553	0.277	0.158	0.321	0.719	0.967	0.918	0.910
Xinhai	0.362	0.546	0.104	-0.058	0.220	0.551	0.814	0.958	1.000	0.869	0.973	0.760	0.311	0.541	0.227	0.114	0.283	0.724	0.947	0.896	0.905
WF Hospital	0.627	0.743	0.405	0.201	0.550	0.786	0.909	0.867	0.869	1.000	0.876	0.877	0.440	0.807	0.410	0.394	0.545	0.887	0.910	0.837	0.951
WF Community	0.372	0.557	0.114	-0.057	0.217	0.555	0.822	0.969	0.973	0.876	1.000	0.764	0.350	0.541	0.229	0.129	0.299	0.729	0.962	0.921	0.915
Muzha	0.610	0.637	0.358	0.191	0.586	0.706	0.803	0.748	0.760	0.877	0.764	1.000	0.534	0.780	0.384	0.347	0.511	0.908	0.796	0.765	0.872
Taipei Zoo	0.597	0.390	0.291	0.433	0.413	0.458	0.412	0.367	0.311	0.440	0.350	0.534	1.000	0.529	0.511	0.208	0.282	0.512	0.440	0.576	0.432
Dazhi	0.819	0.834	0.722	0.580	0.866	0.926	0.831	0.553	0.541	0.807	0.541	0.780	0.529	1.000	0.656	0.634	0.739	0.869	0.649	0.582	0.766
Jiannan Rd	0.714	0.685	0.724	0.859	0.720	0.716	0.587	0.277	0.227	0.410	0.229	0.384	0.511	0.656	1.000	0.576	0.609	0.497	0.369	0.358	0.392
Xihu	0.727	0.856	0.953	0.599	0.831	0.795	0.609	0.158	0.114	0.394	0.129	0.347	0.208	0.634	0.576	1.000	0.967	0.464	0.234	0.152	0.393



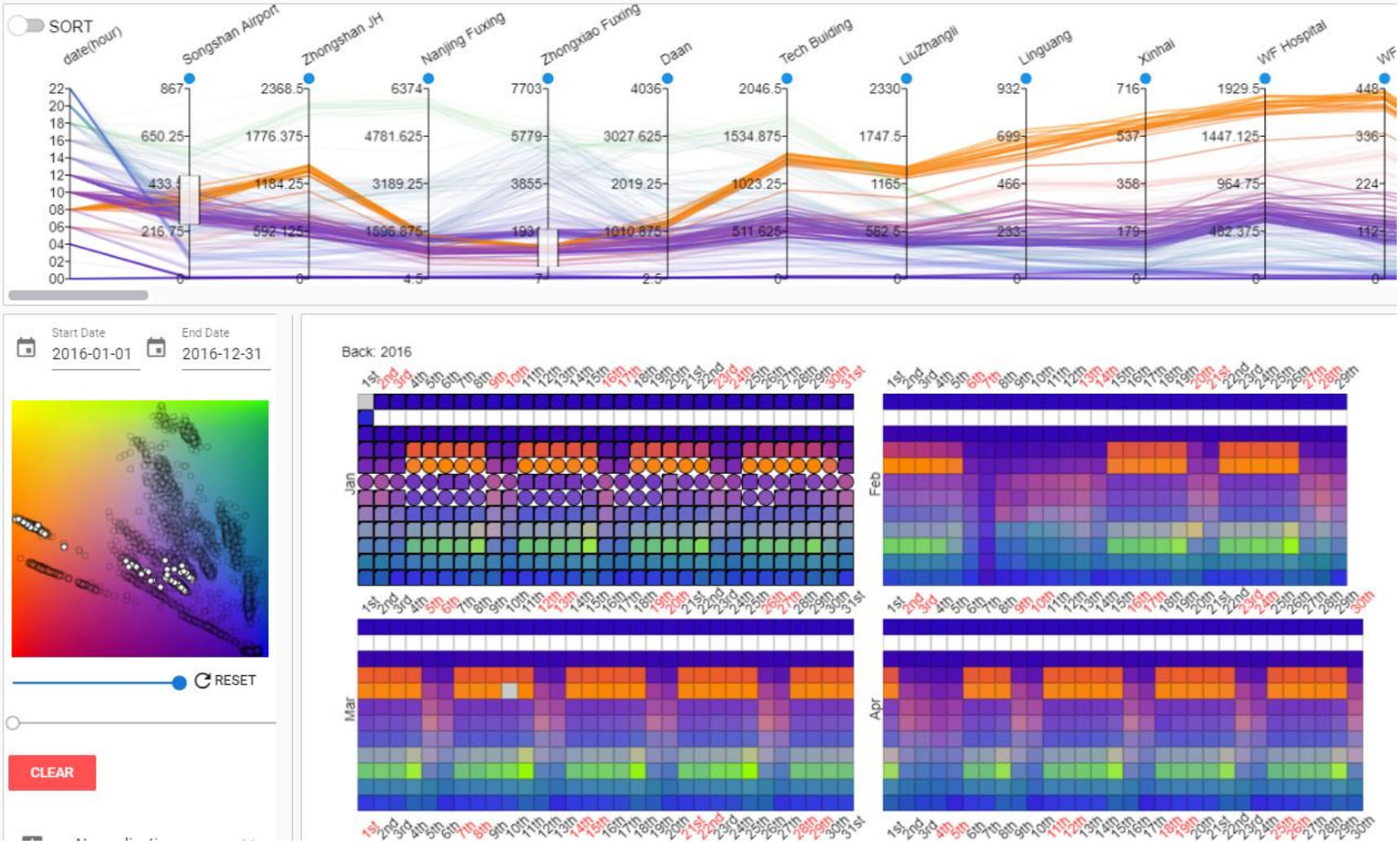
Parallel Coordinates Plot



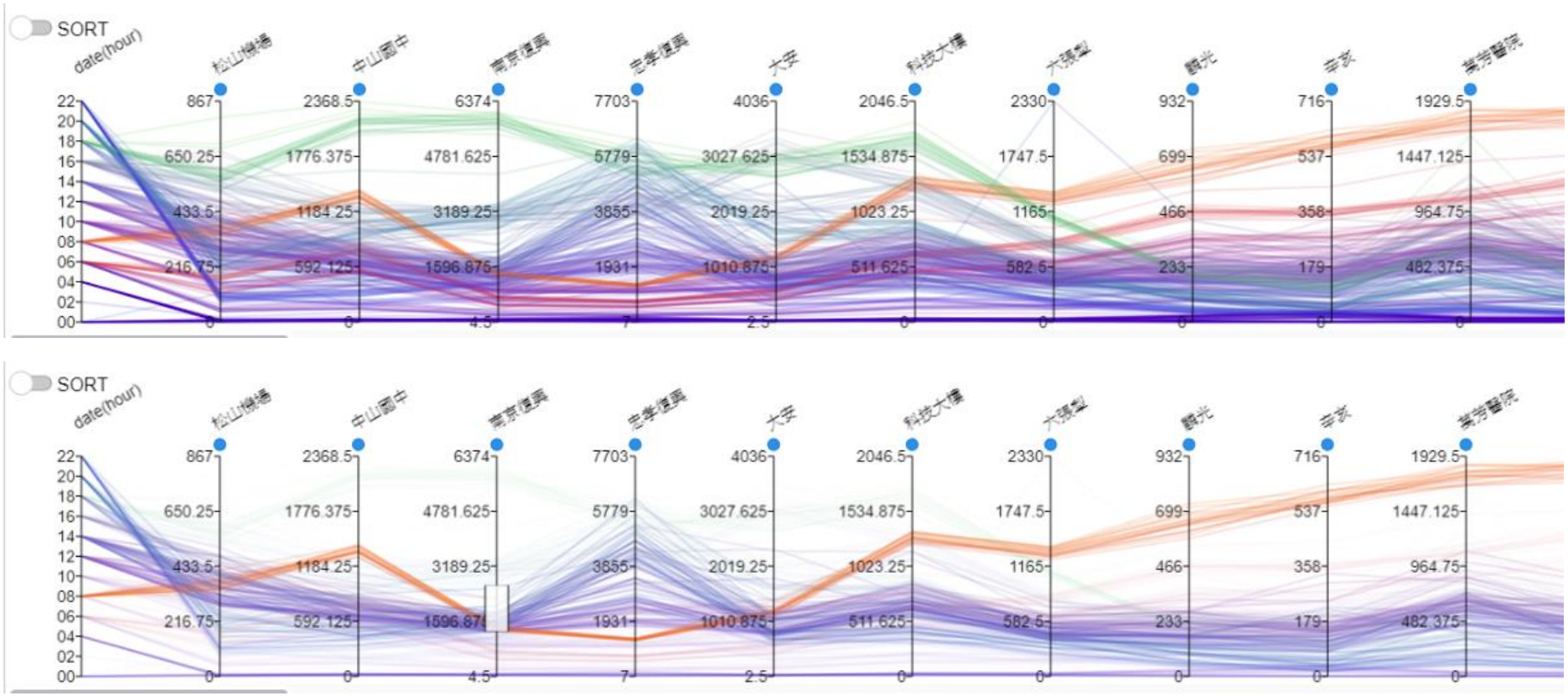
NEW TRAINING ▶ CONTINUE ❙❙ PAUSE ⇄ ADJUST



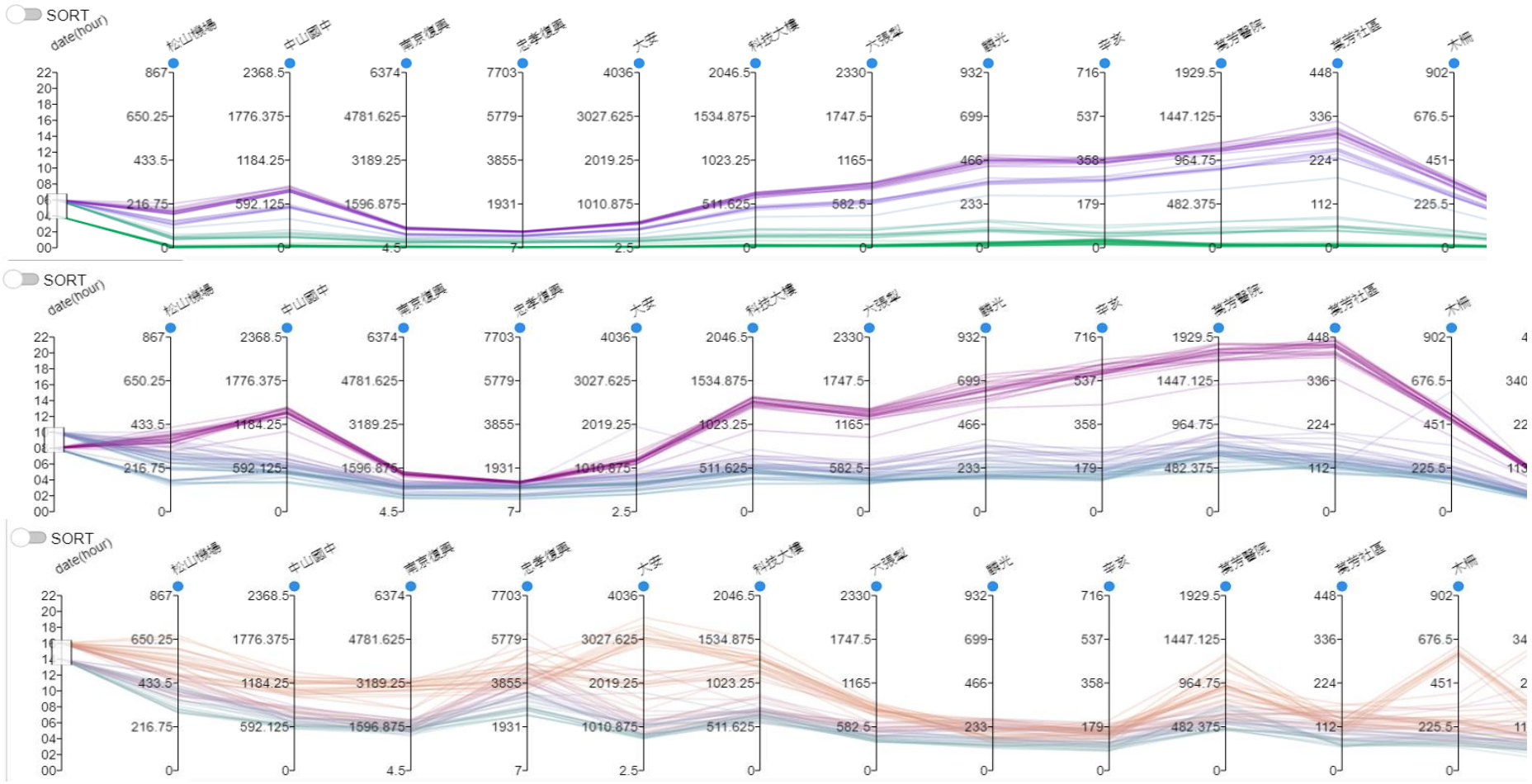
Time Series Multivariate Data Visualization



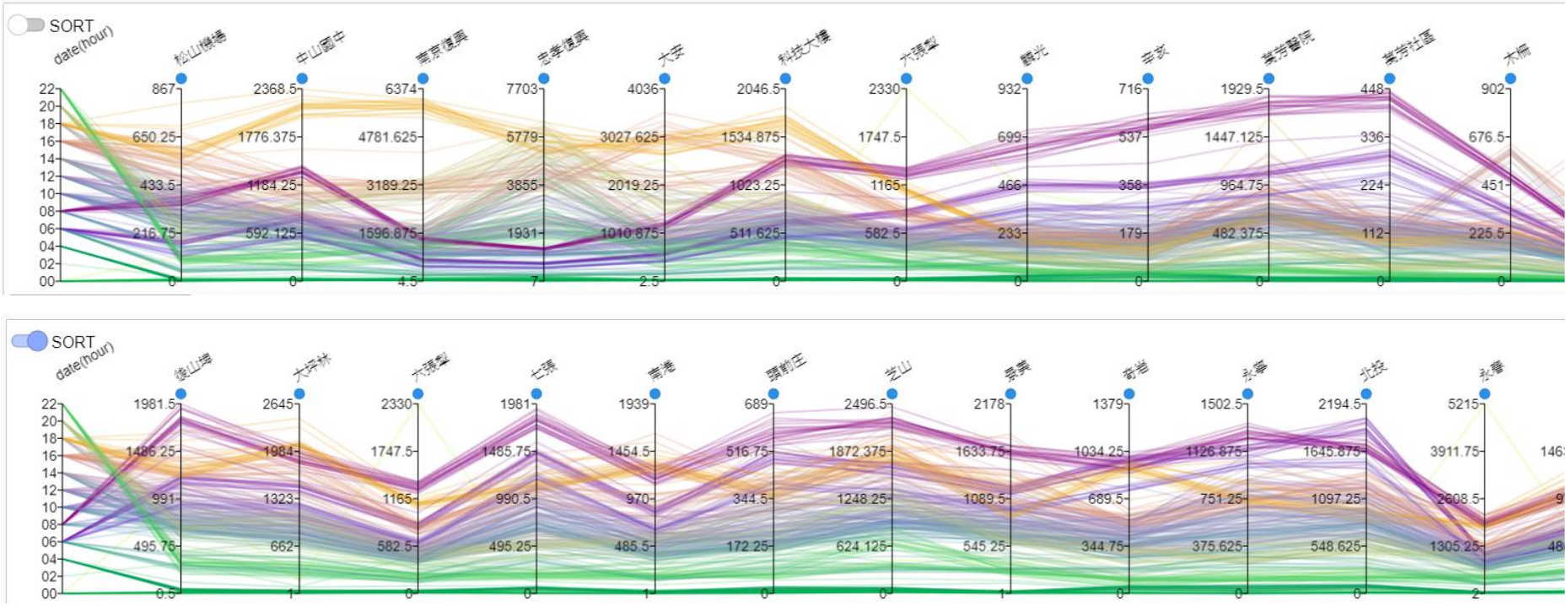
Parallel Coordinate Plots: Brushing



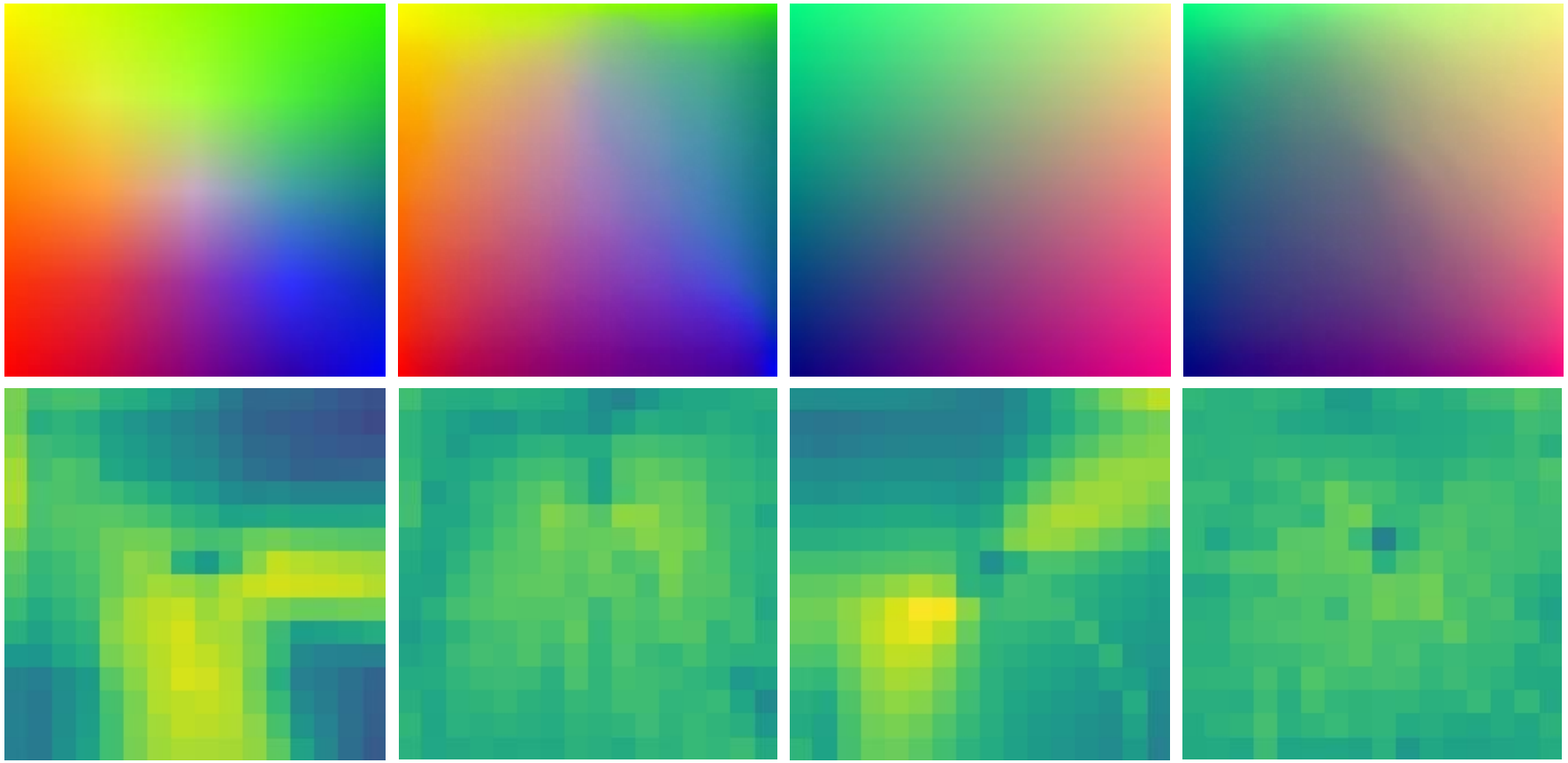
Parallel Coordinate Plots: Time Brushing



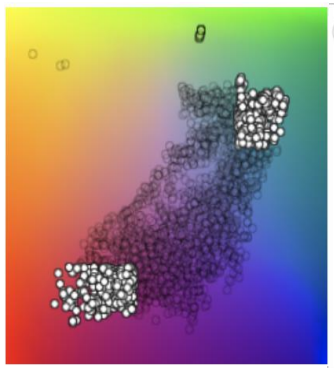
Parallel Coordinate Plots: Axis Arrangements

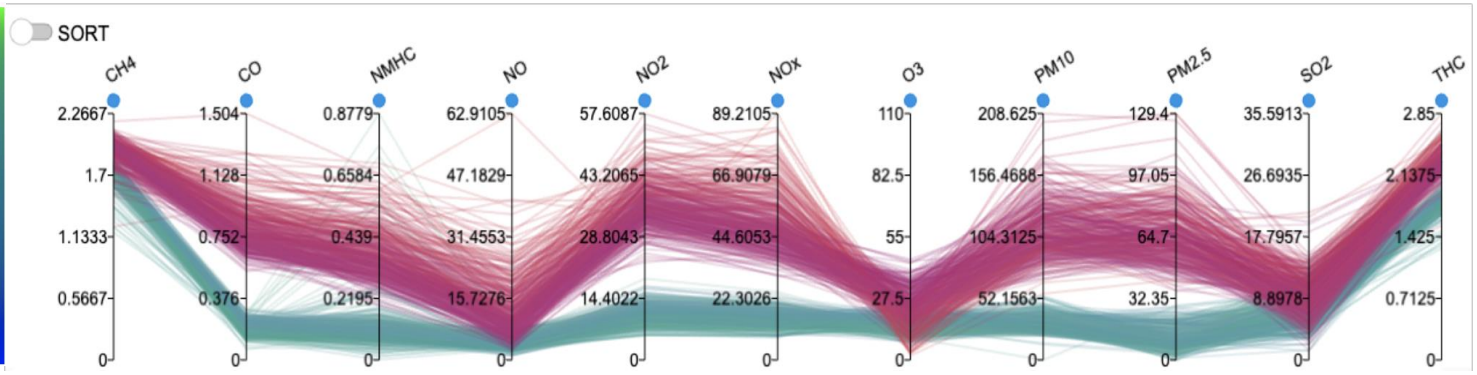


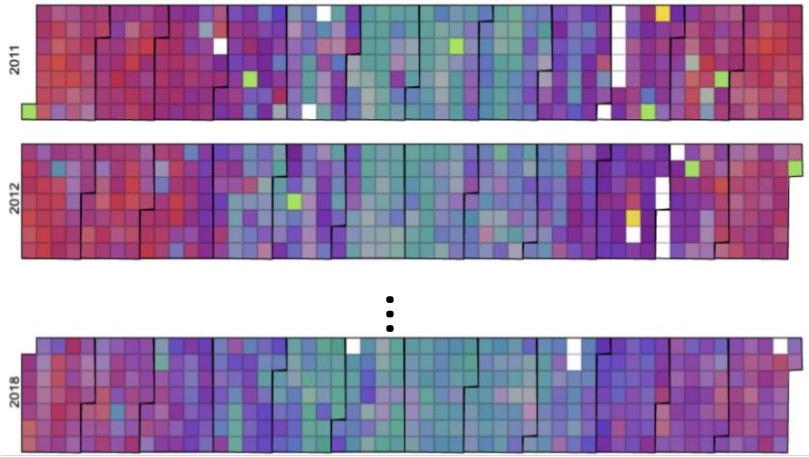
Color Optimization

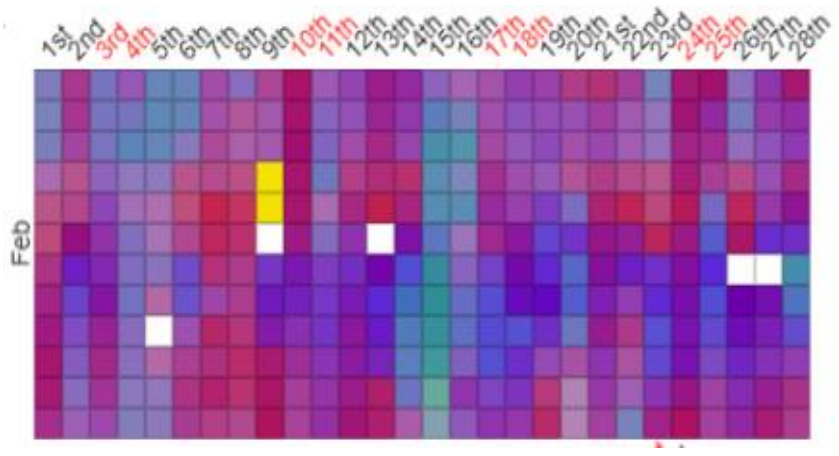


Case Study: Air Quality in Kaohsiung









Case Study: Taipei Metro