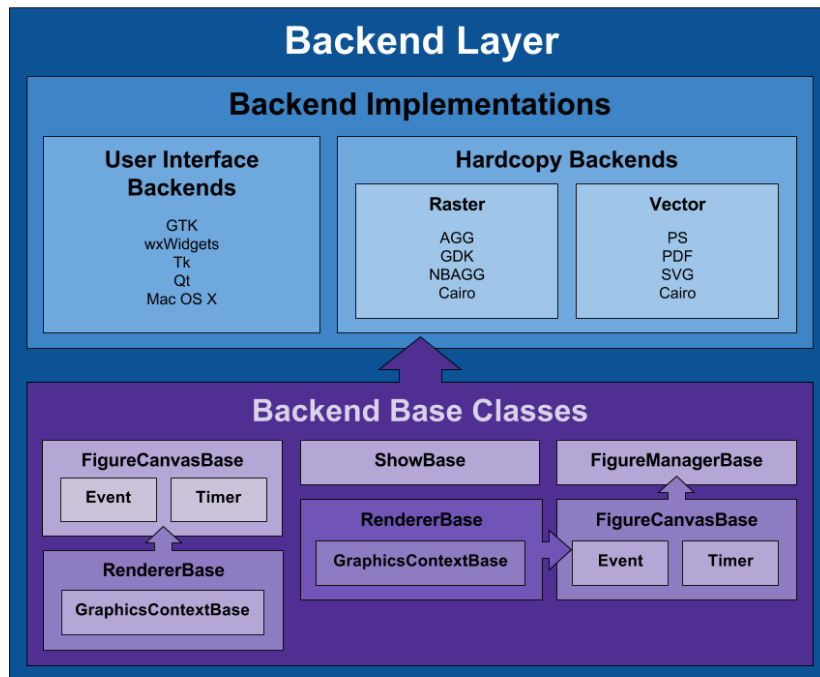
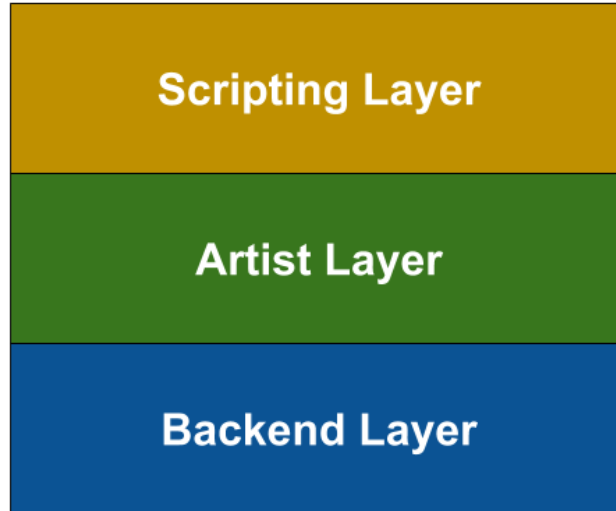


Chapter 2: The matplotlib Architecture



Artist Layer

Artist Implementations

Primitives

Line2D
Rectangle
Polygon
Ellipse
Annotation
FigureImage

Collections

PathCollection
CircleCollection
PolyCollection
EllipseCollection
LineCollection
EventCollection

Containers

GeoAxes

Axis

Figure

YAxis

YTick

Axes

Figure

Rectangle

Canvas

Artist Base Classes

Text

Tick

Patch

Axes

Axis

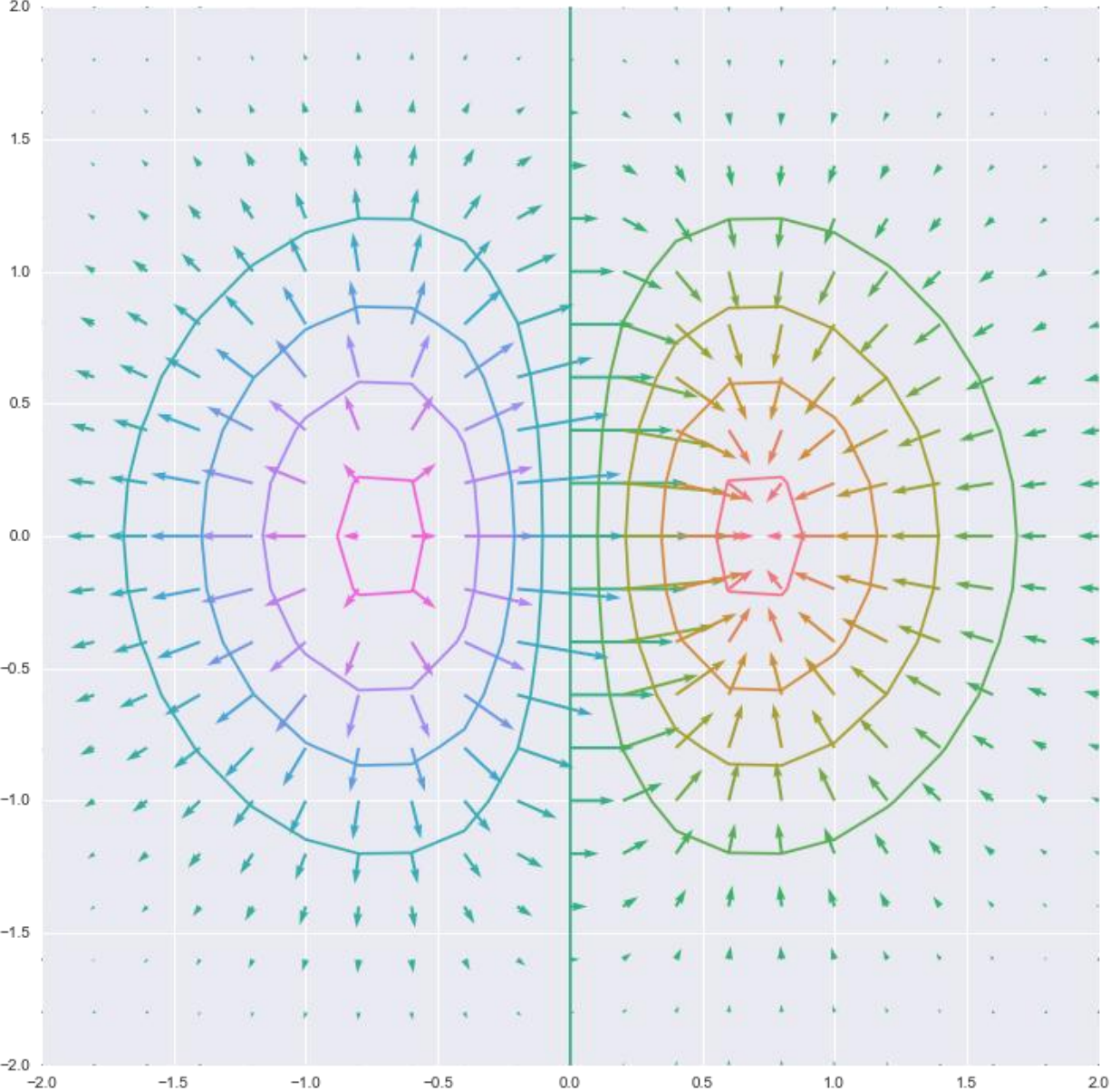
Artist

Axes

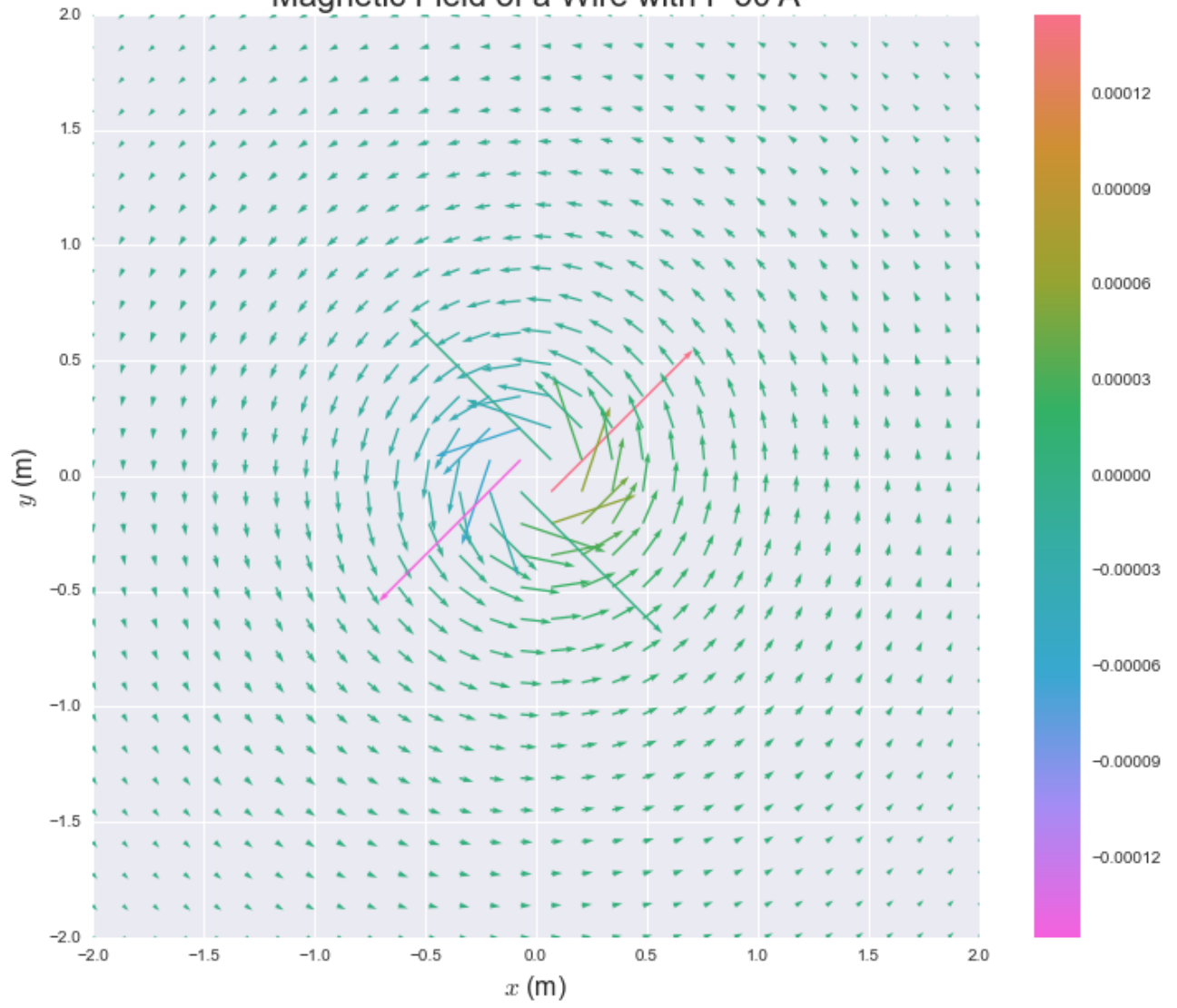
Figure

Transform

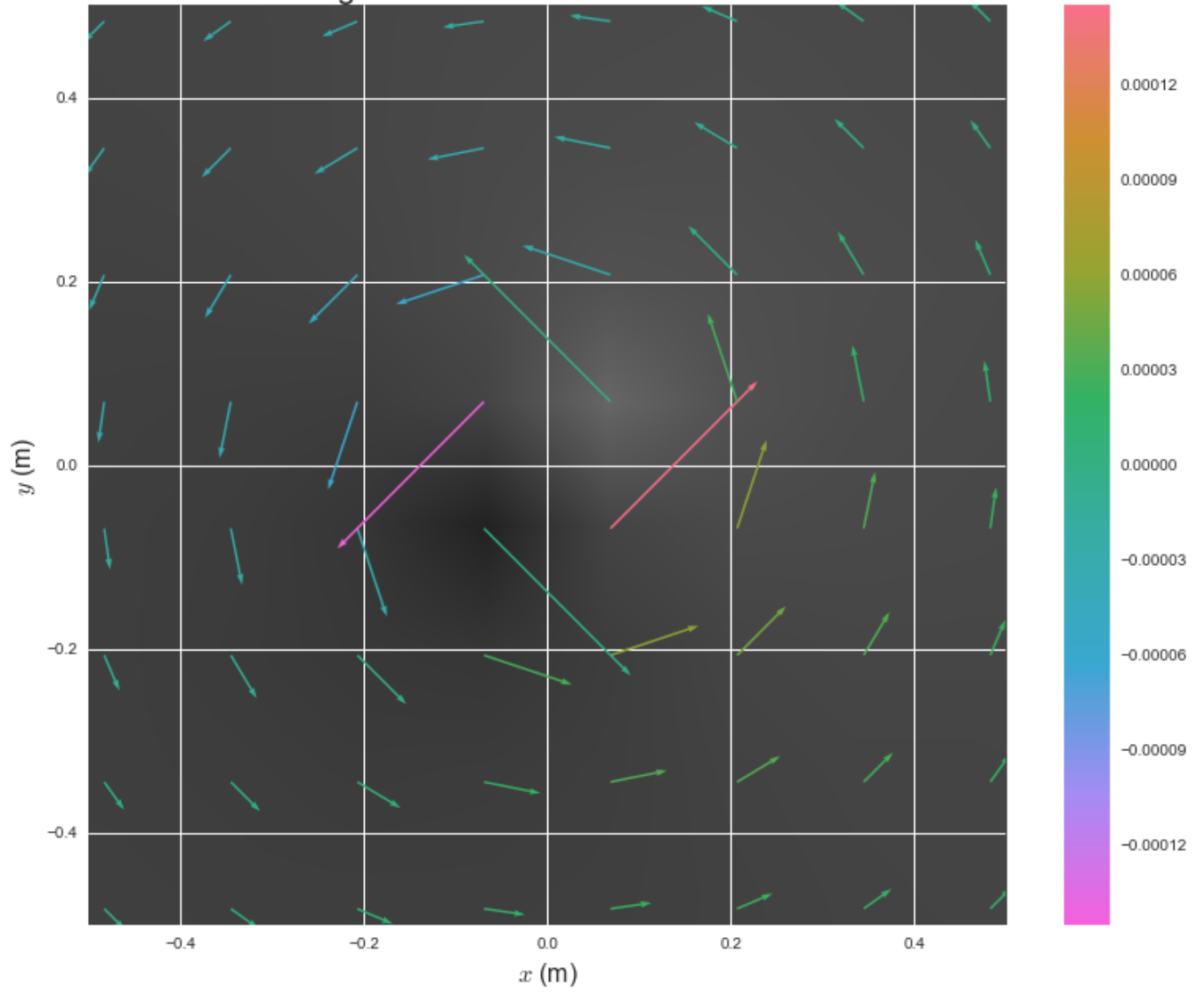
Chapter 3: matplotlib APIs and Integrations



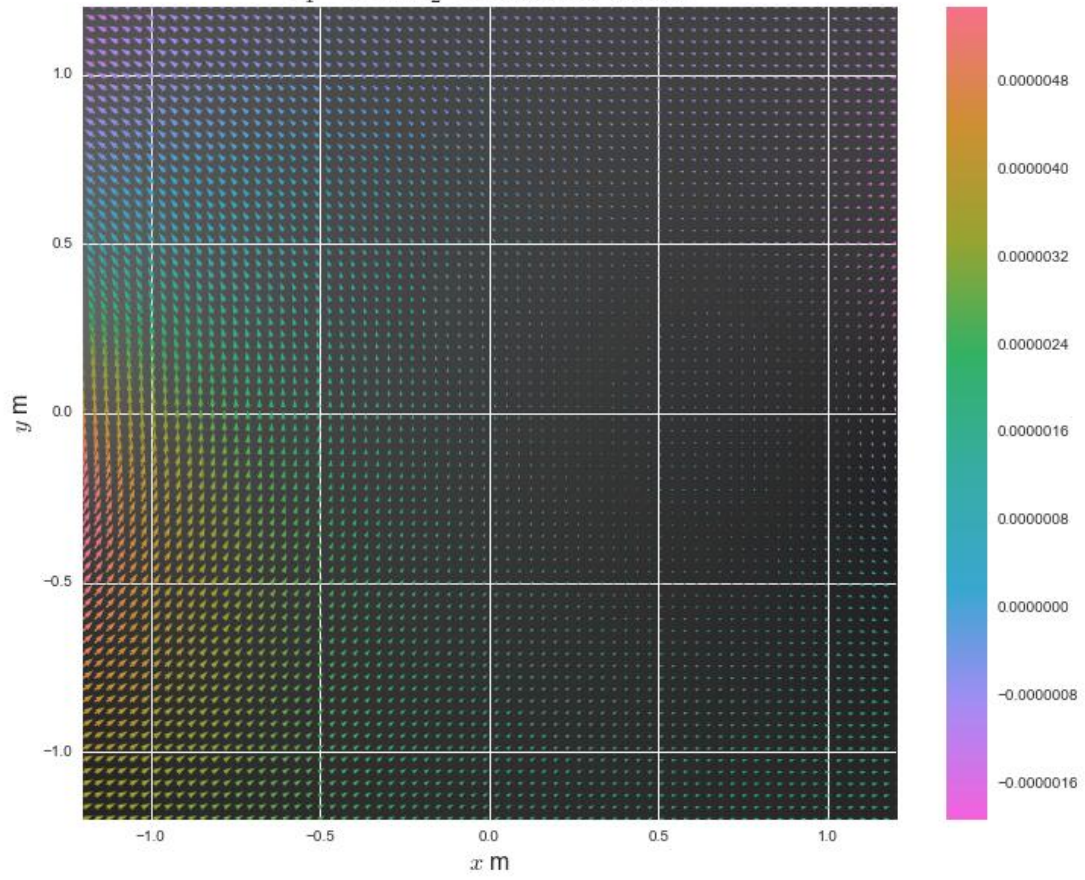
Magnetic Field of a Wire with $I=50\text{ A}$



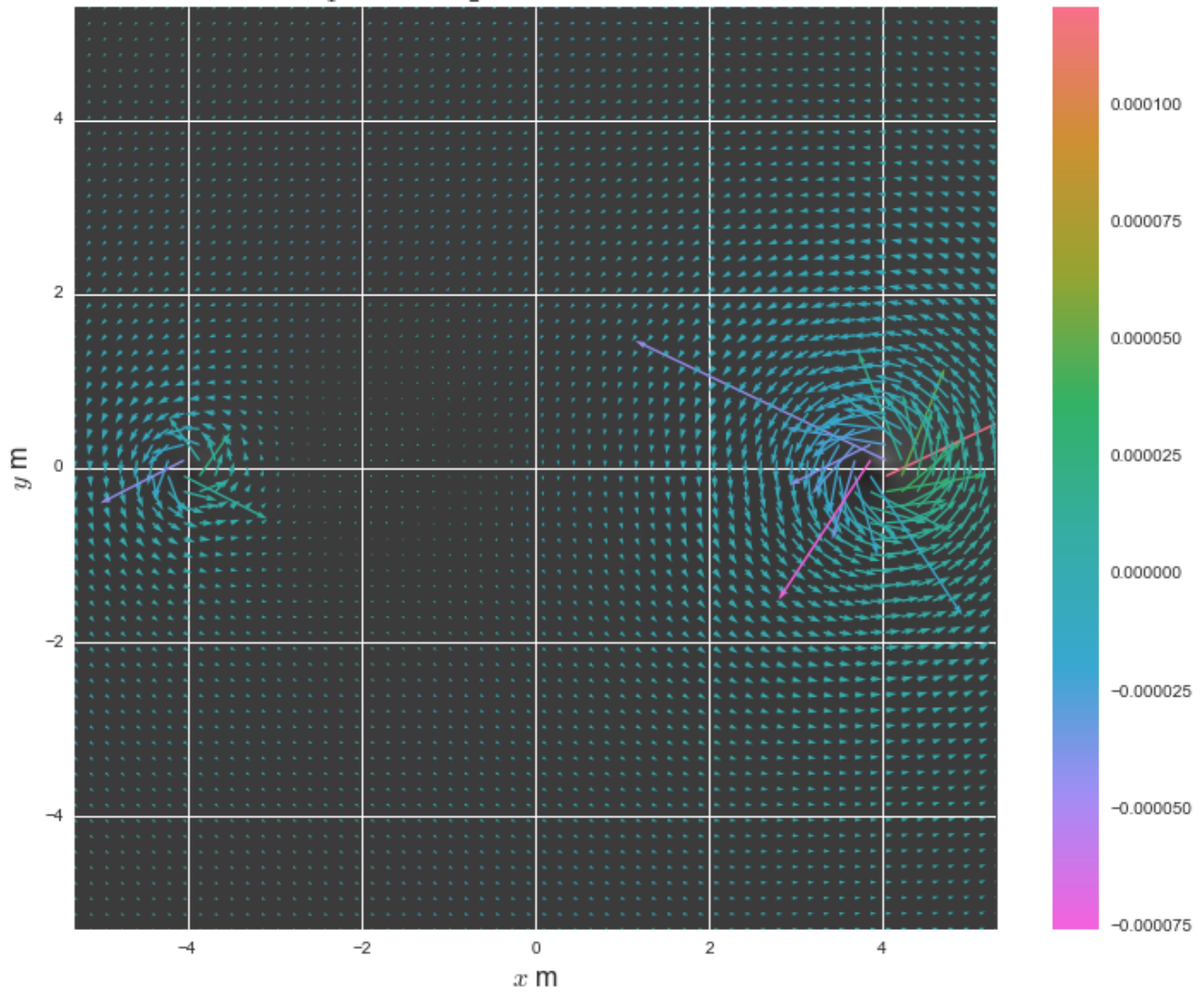
Magnetic Field of a Wire with $I=50\text{ A}$



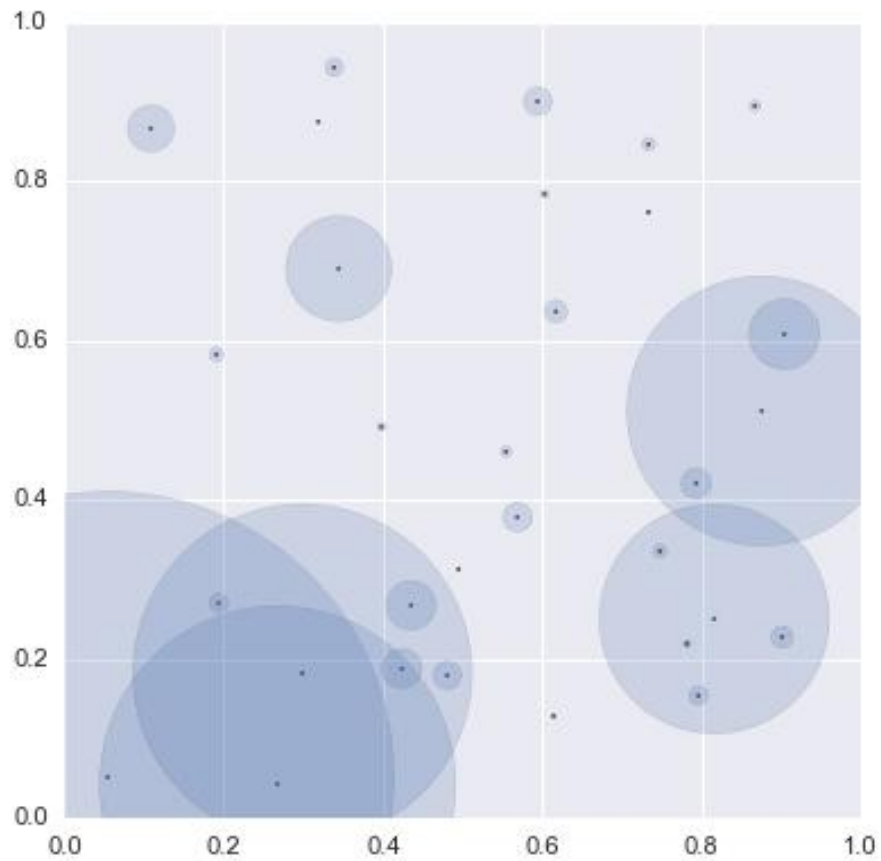
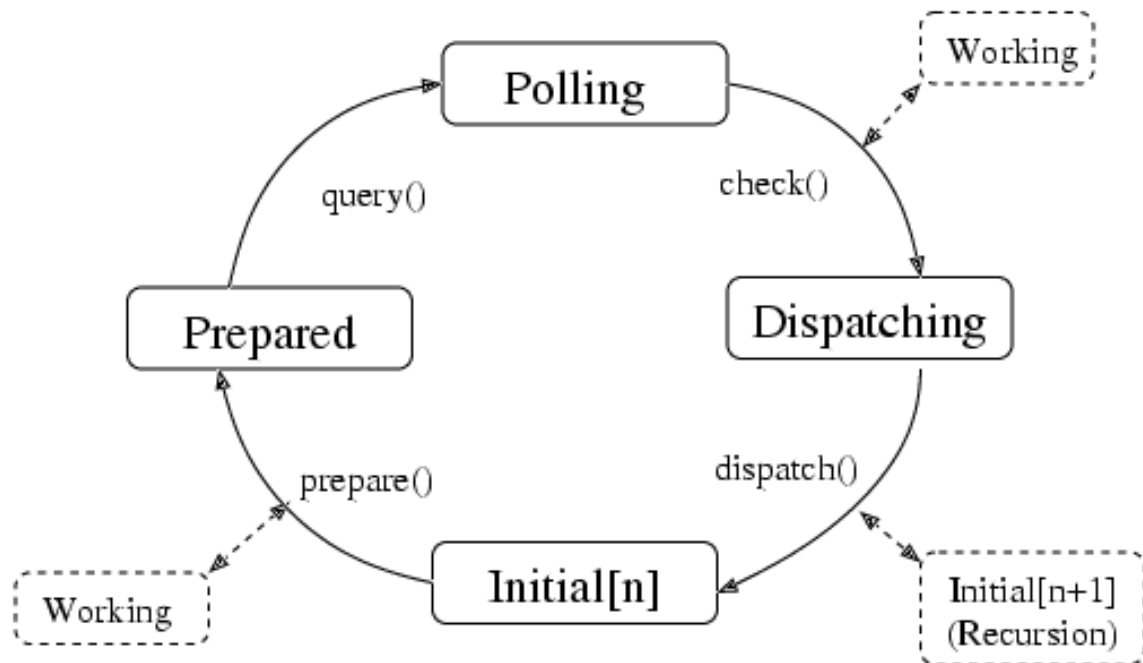
Magnetic Field for Two Wires
 $I_1 = 10 \text{ A}$, $I_2 = 20 \text{ A}$, at $d = 2.0 \text{ m}$

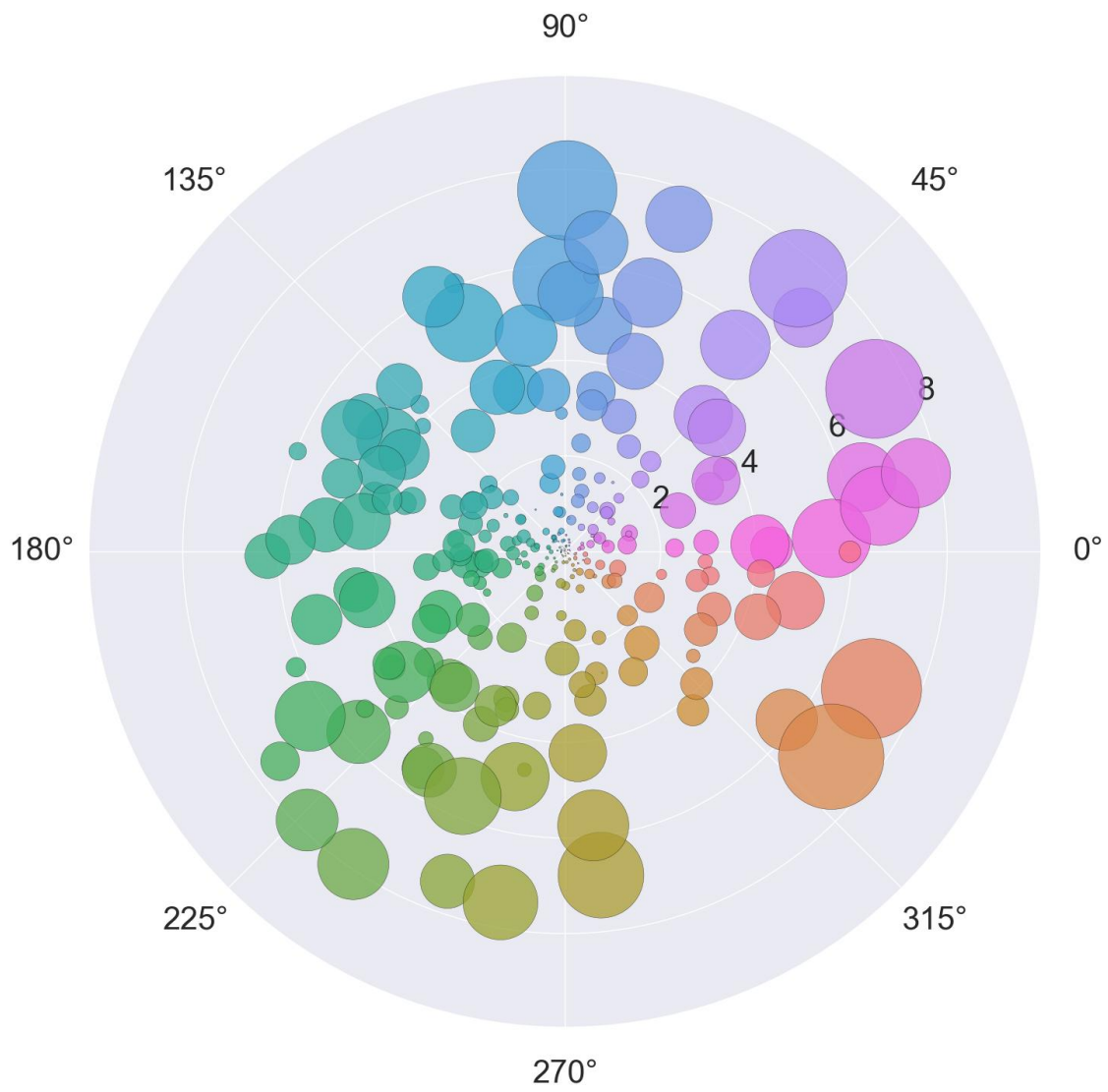


Magnetic Field for Two Wires
 $I_1 = 45 \text{ A}$, $I_2 = 15 \text{ A}$, at $d = 4.0 \text{ m}$

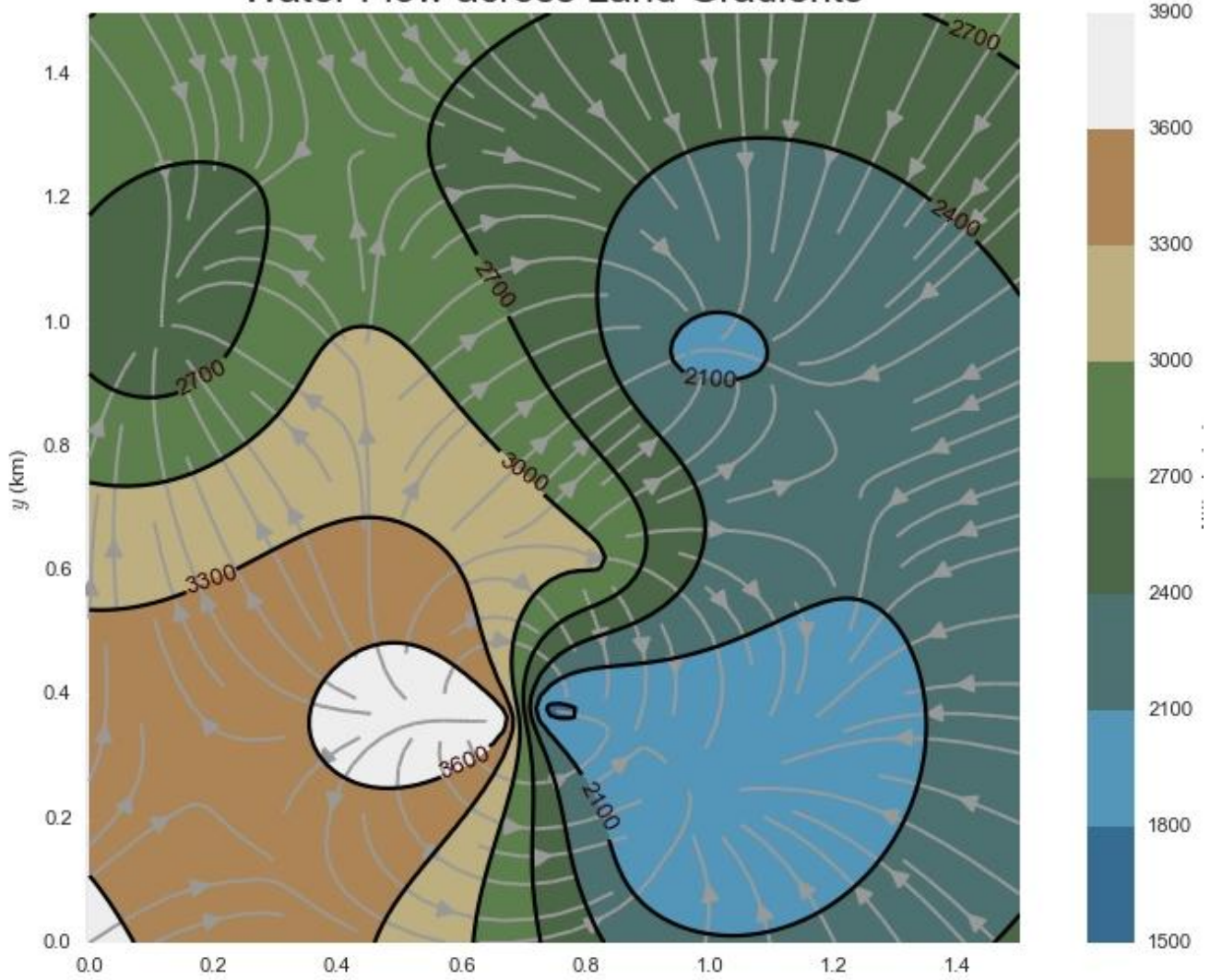


Chapter 4: Event Handling and Interactive Plots

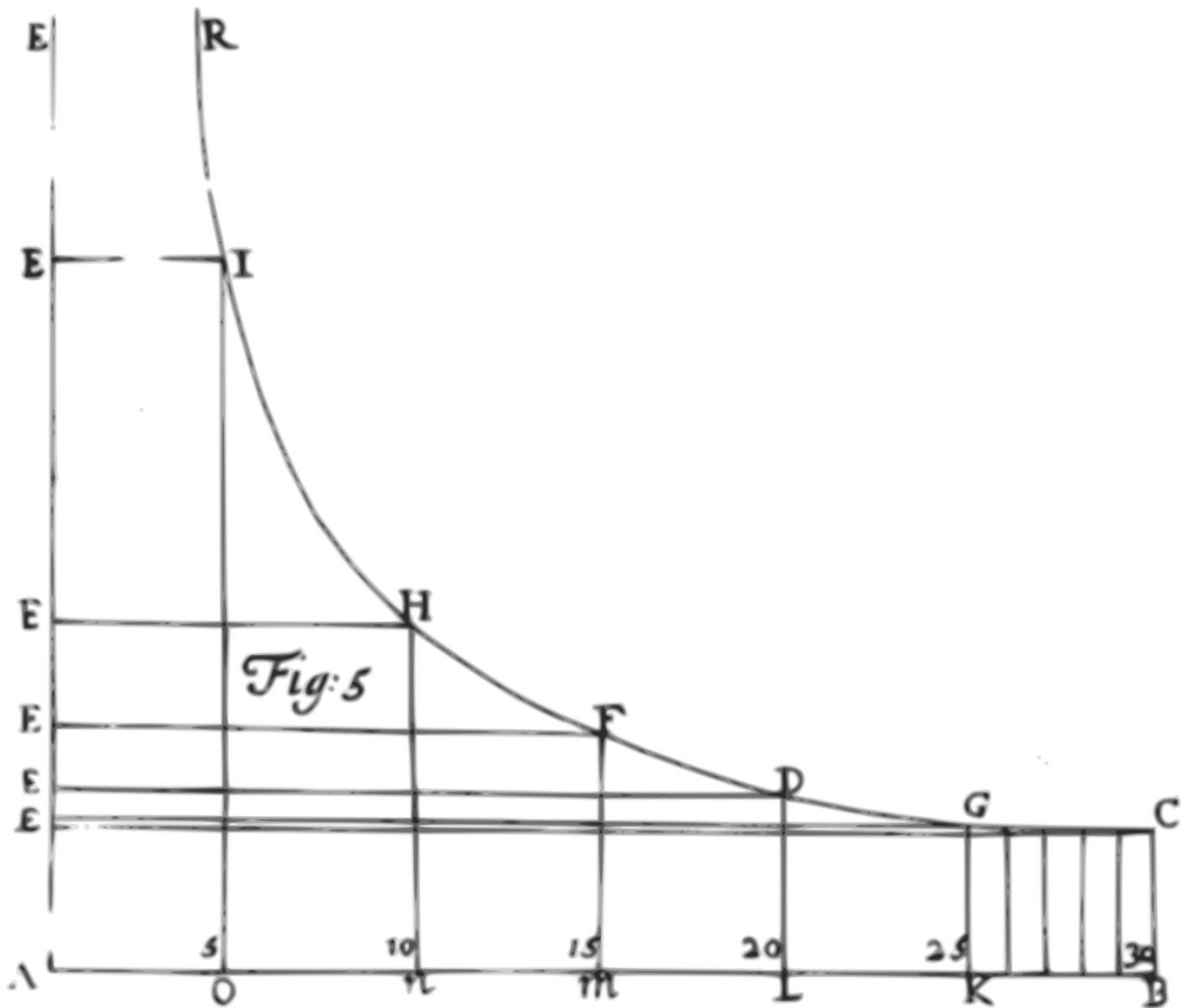
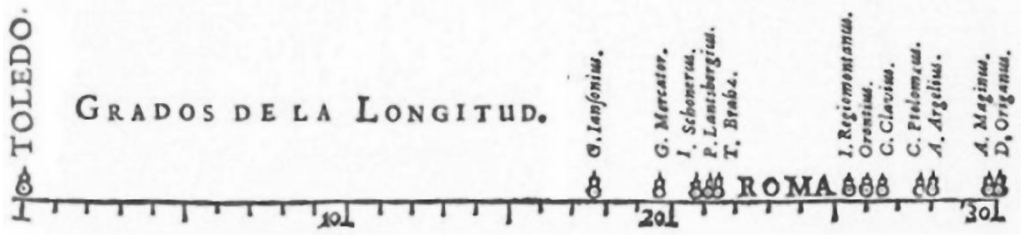




Water Flow across Land Gradients



Chapter 5: High-level Plotting and Data Analysis



Exports and Imports to and from DENMARK & NORWAY from 1700 to 1780.

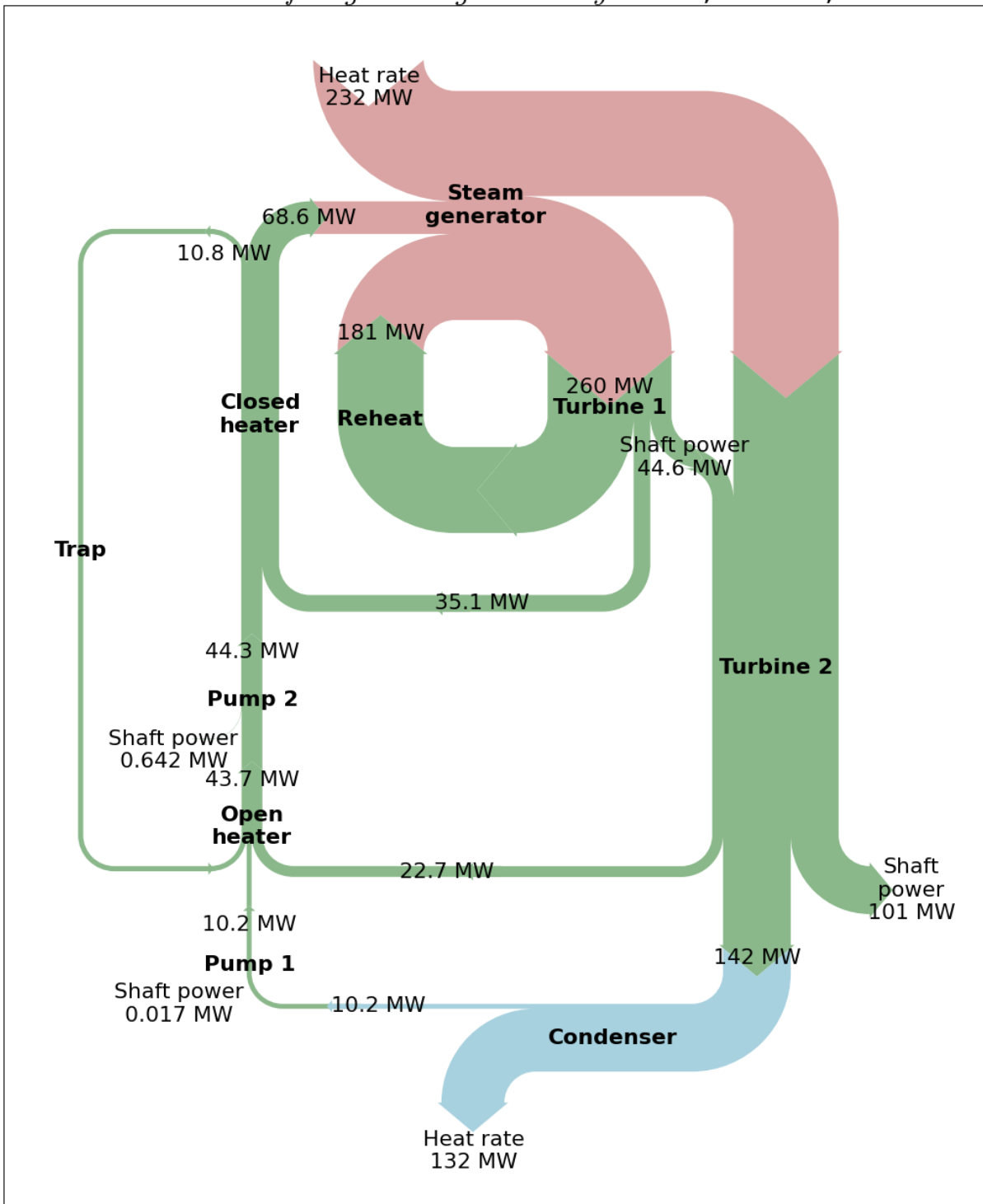


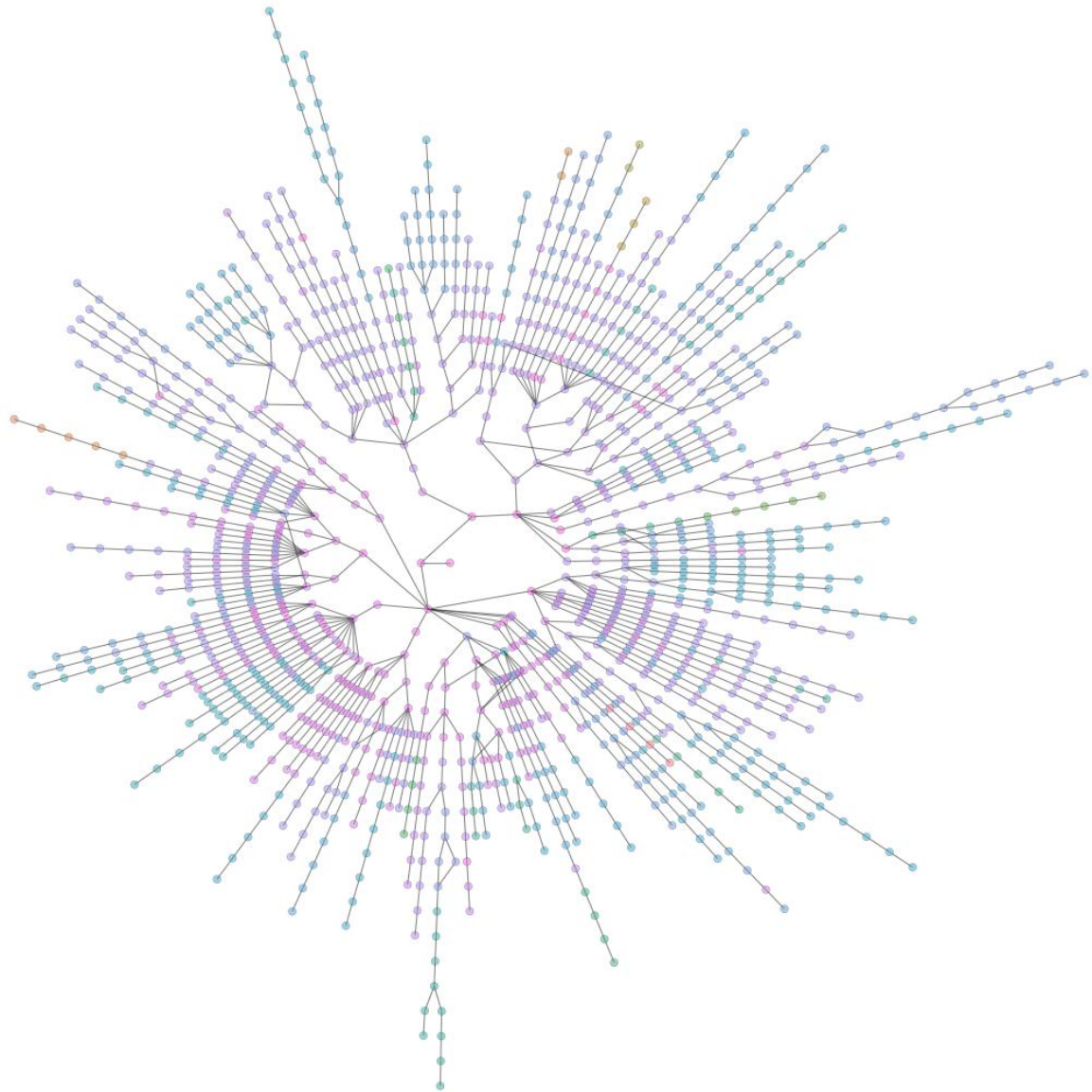
The Bottom line is divided into Years, the Right hand line into £10,000 each.

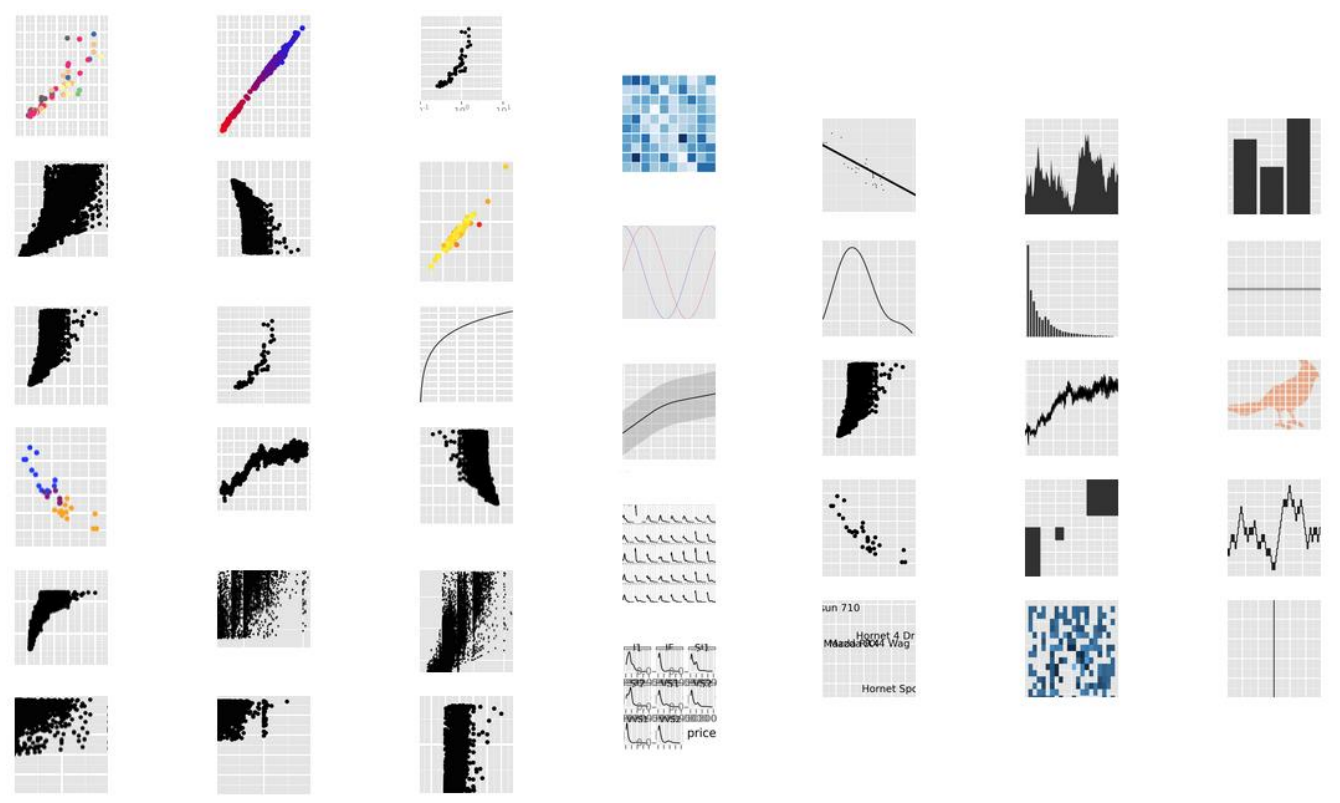
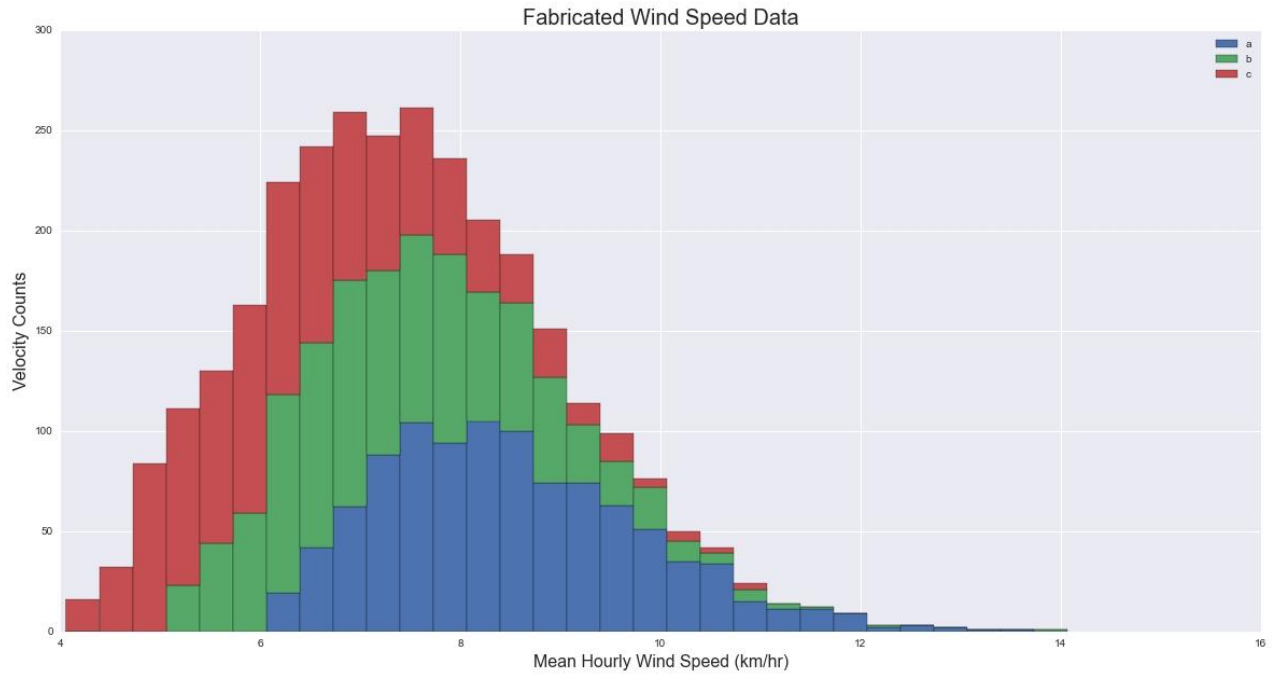
Published as the Act directs, 1st May 1786, by W^m. Playfair

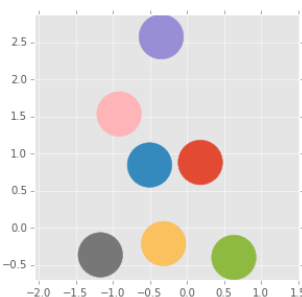
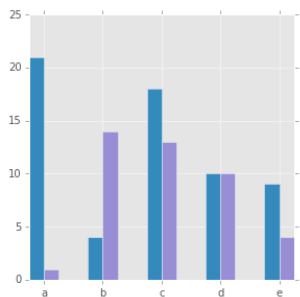
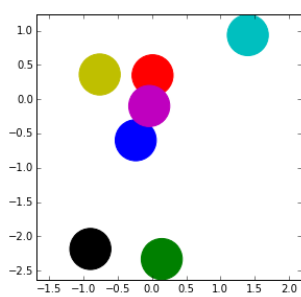
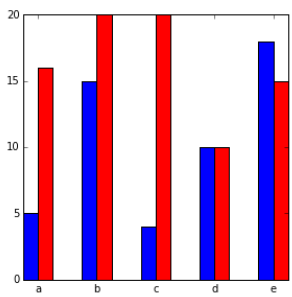
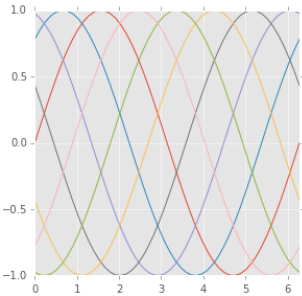
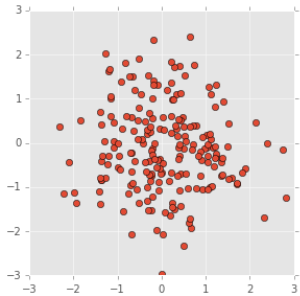
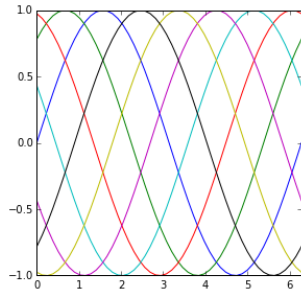
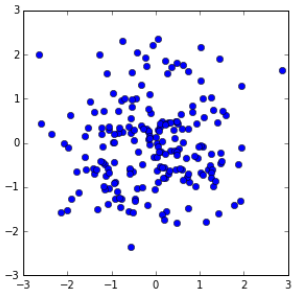
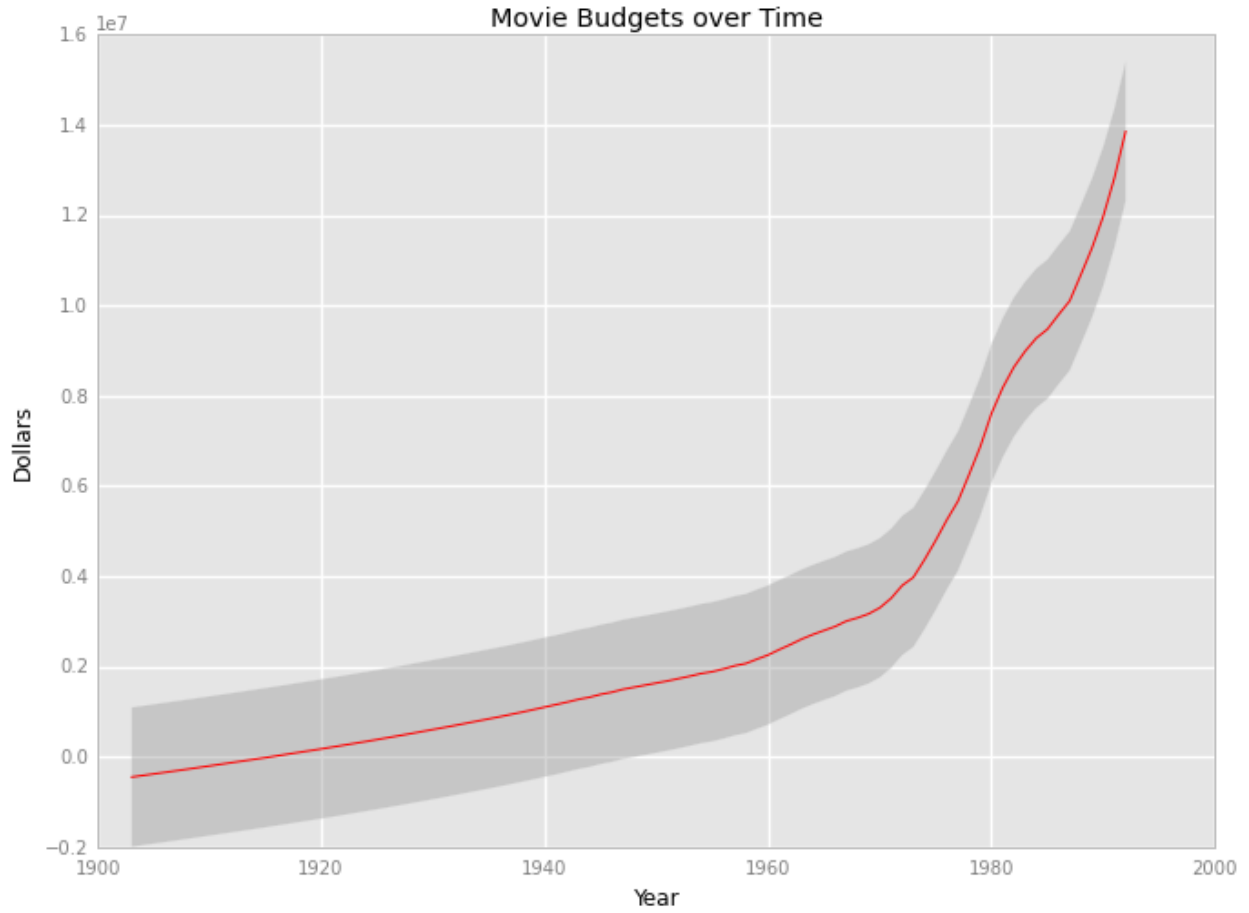
Nesle sculpt 392, Strand, London.

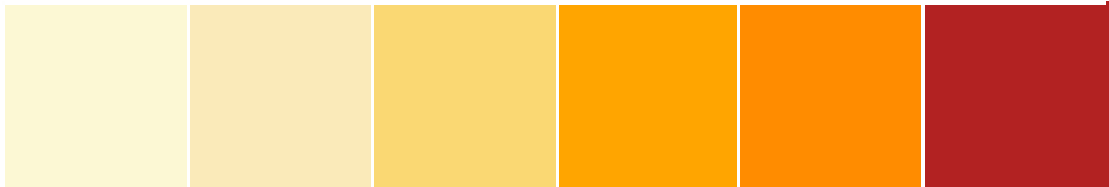
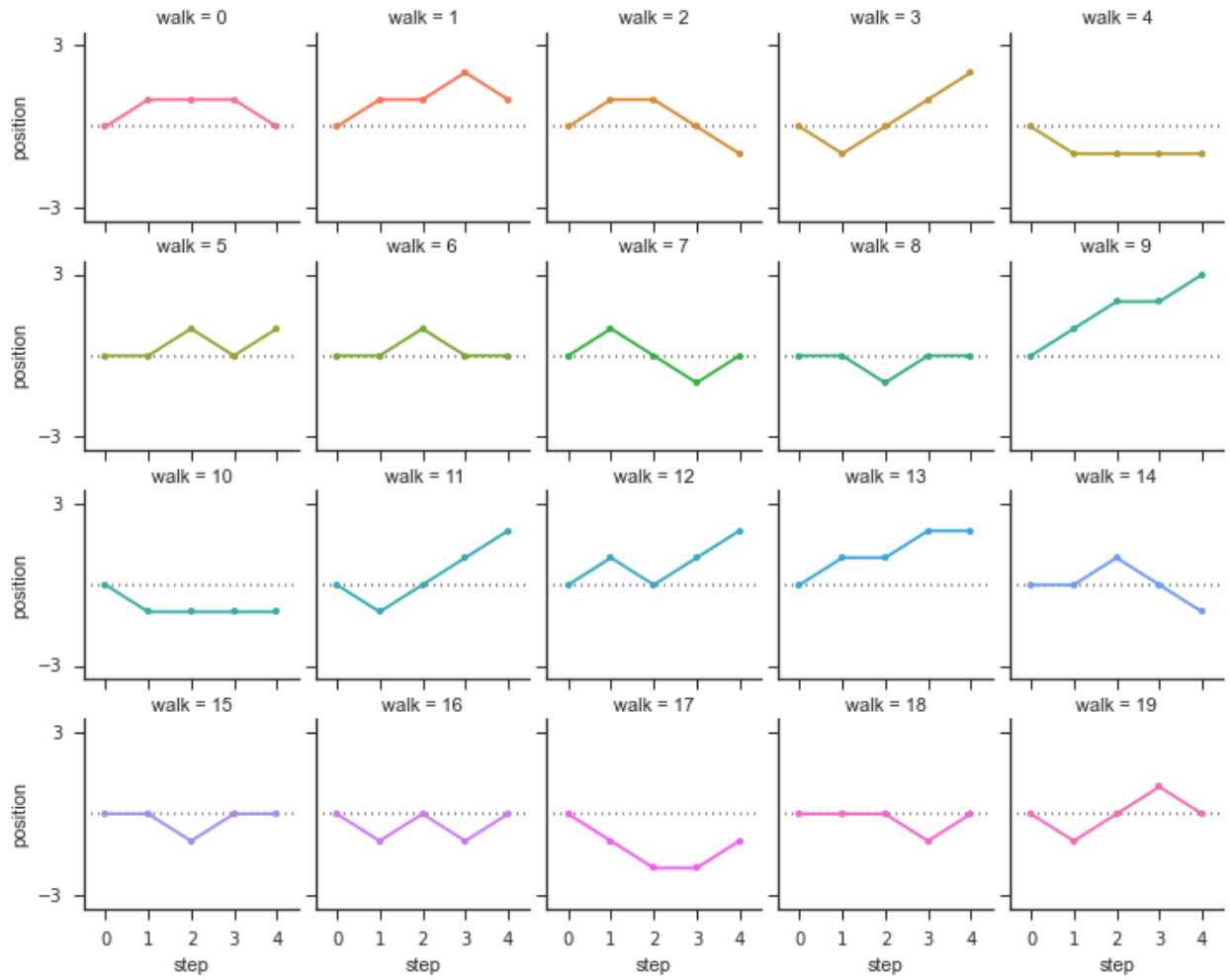
Rankine Power Cycle
 Example 8.6 from Moran and Shapiro
Fundamentals of Engineering Thermodynamics, 6th ed., 2008



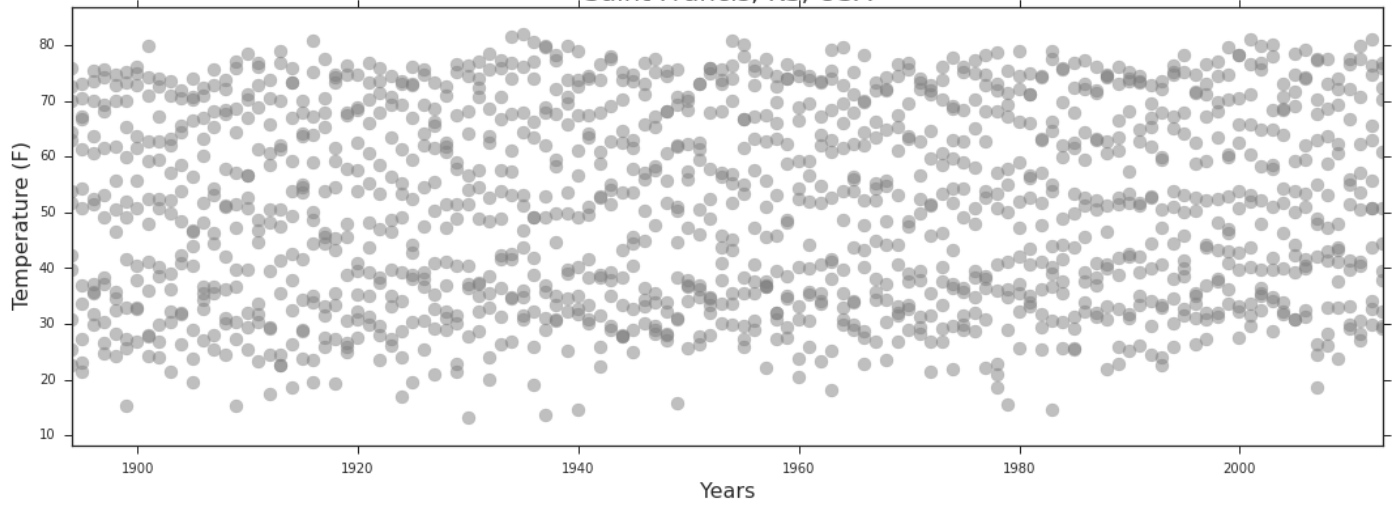




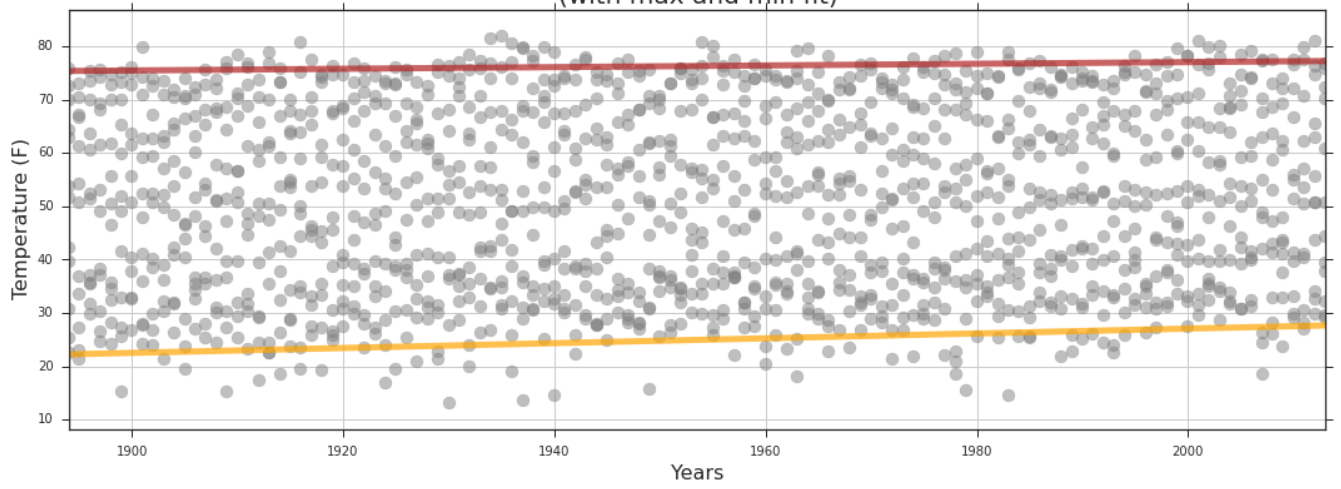




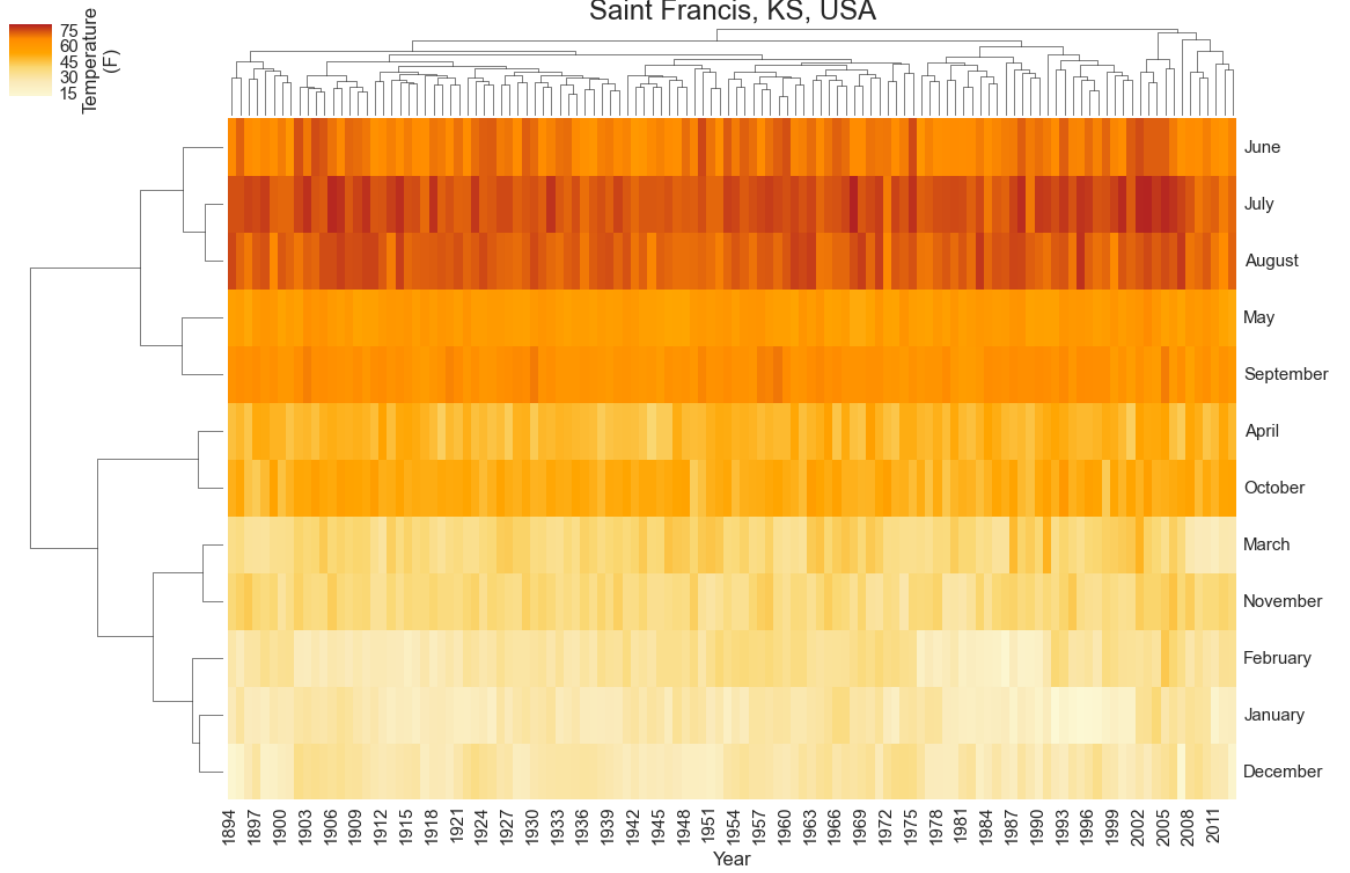
Mean Monthly Temperatures from 1894-2013
Saint Francis, KS, USA



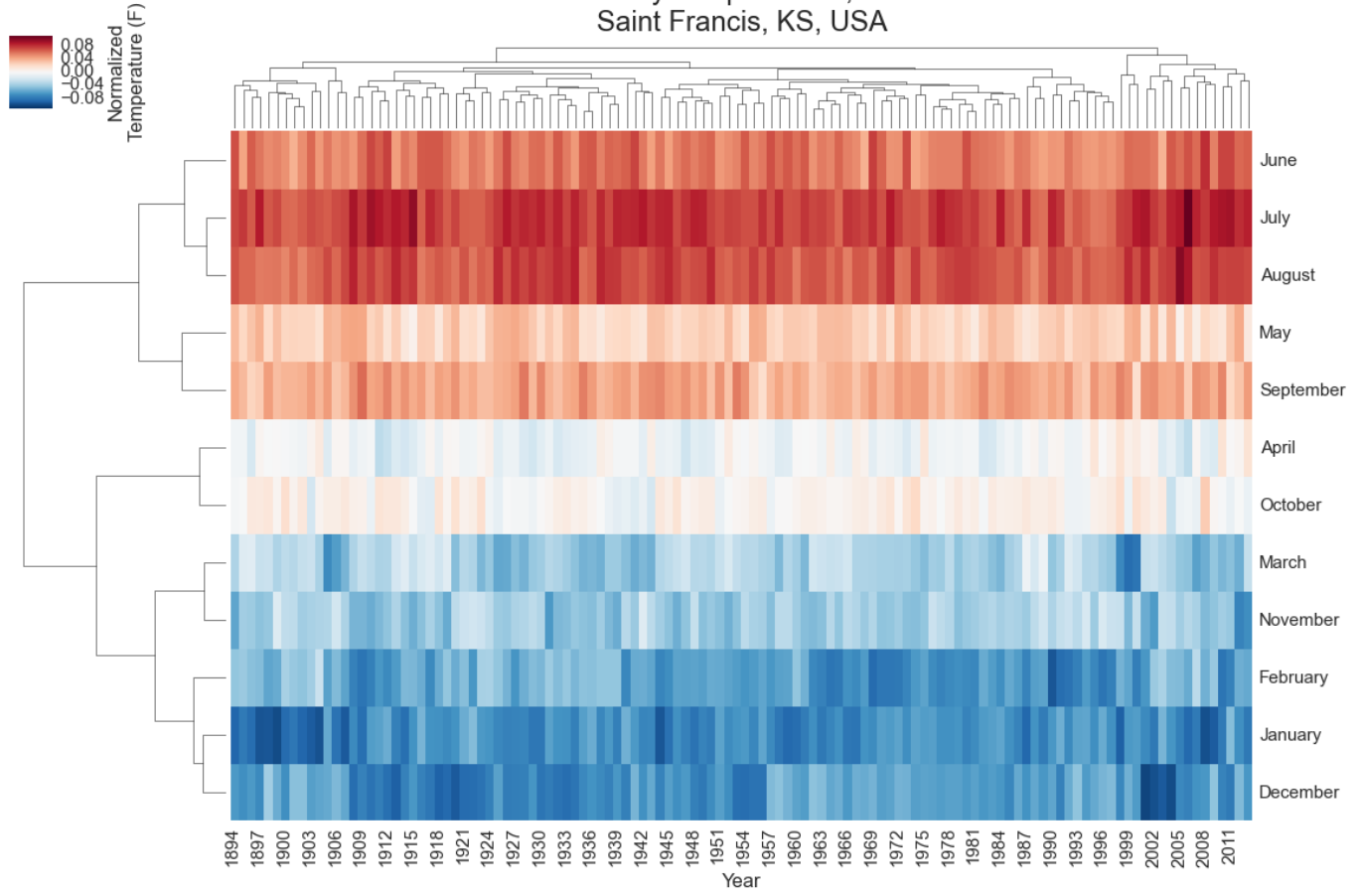
Mean Monthly Temperatures from 1894-2013
Saint Francis, KS, USA
(with max and min fit)



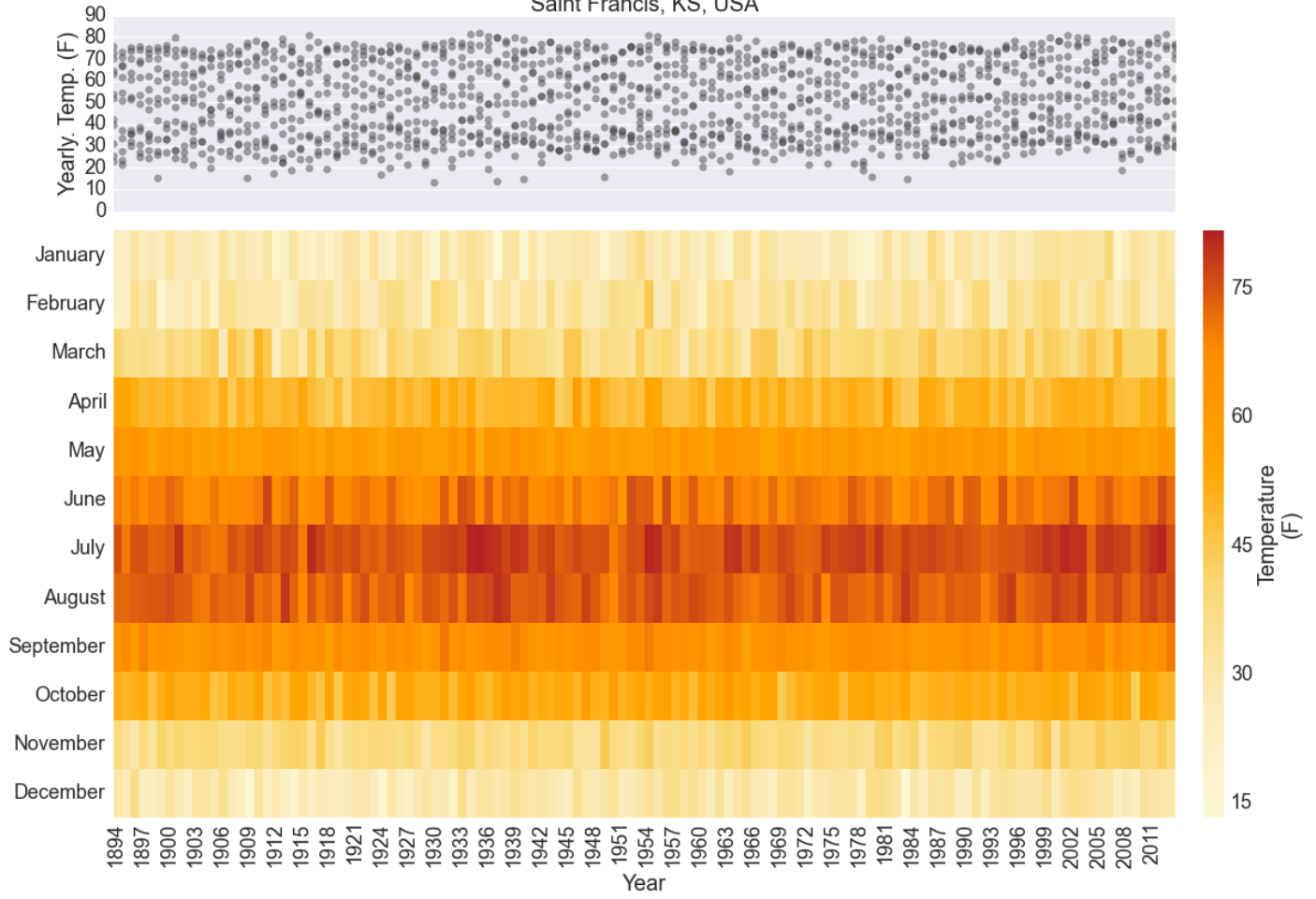
Cluster Map
Mean Monthly Temperatures, 1894-2013
Saint Francis, KS, USA



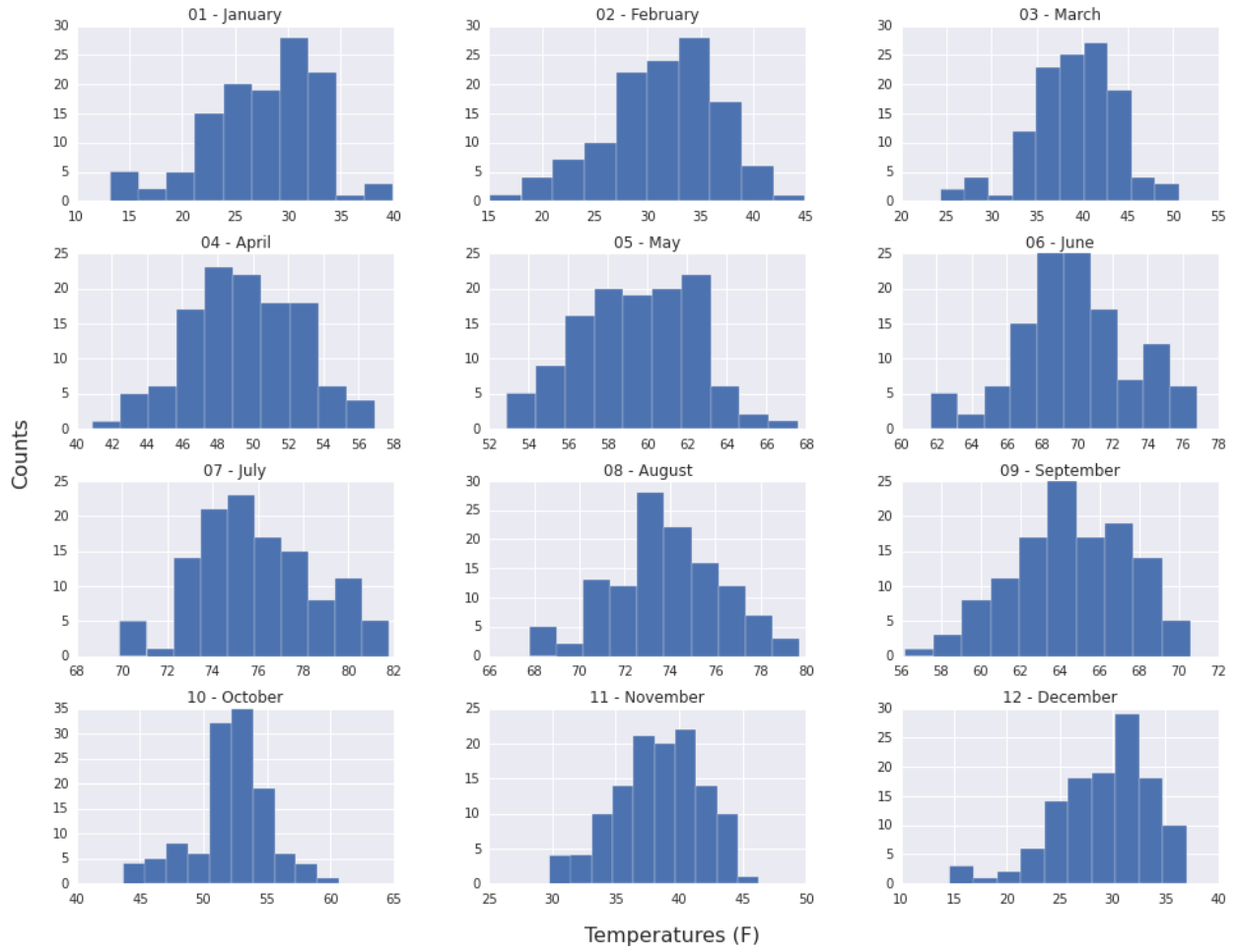
Normalized Cluster Map Mean Monthly Temperatures, 1894-2013 Saint Francis, KS, USA



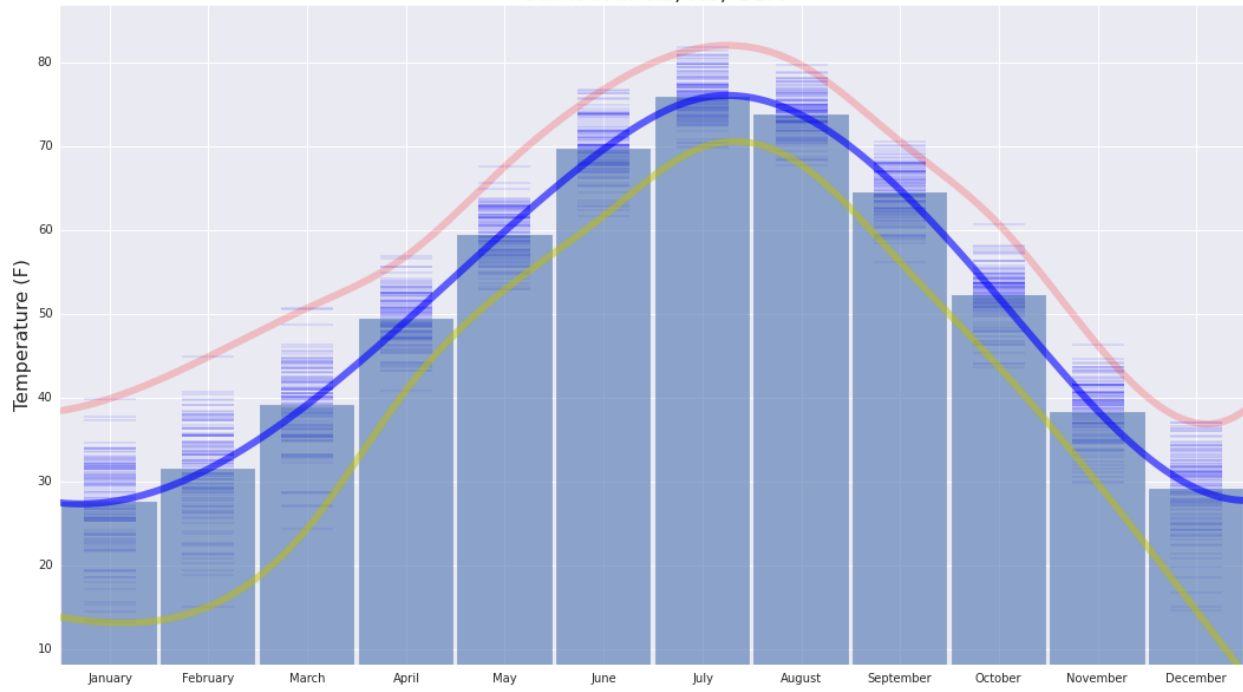
Heat Map with Scatter Plot
Mean Monthly Temperatures, 1894-2013
Saint Francis, KS, USA



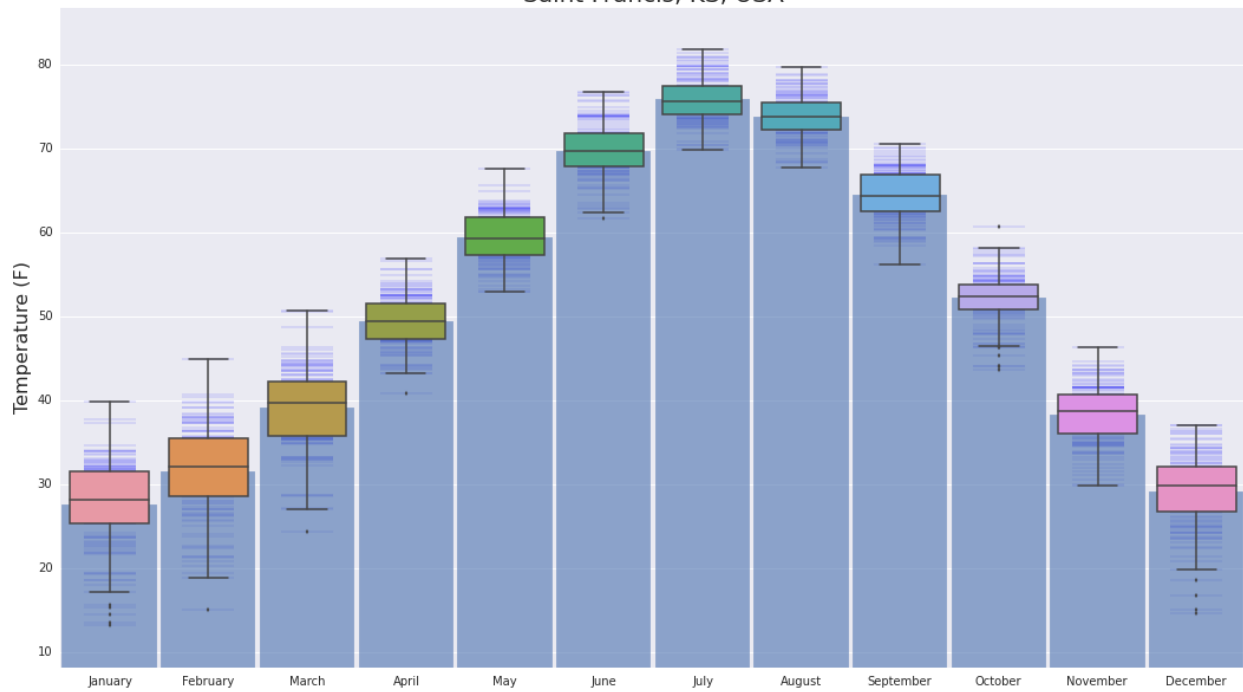
Temperatue Counts by Month, 1894-2013 Saint Francis, KS, USA



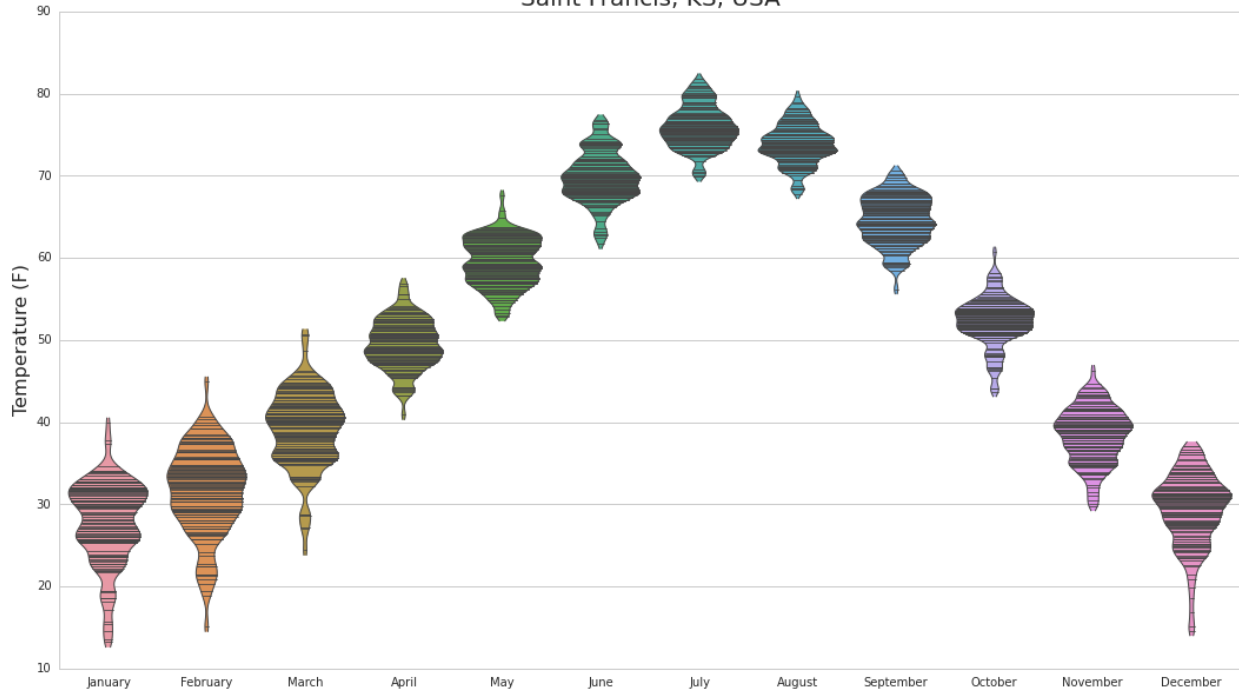
Mean Monthly Temperatures from 1894-2013
Saint Francis, KS, USA



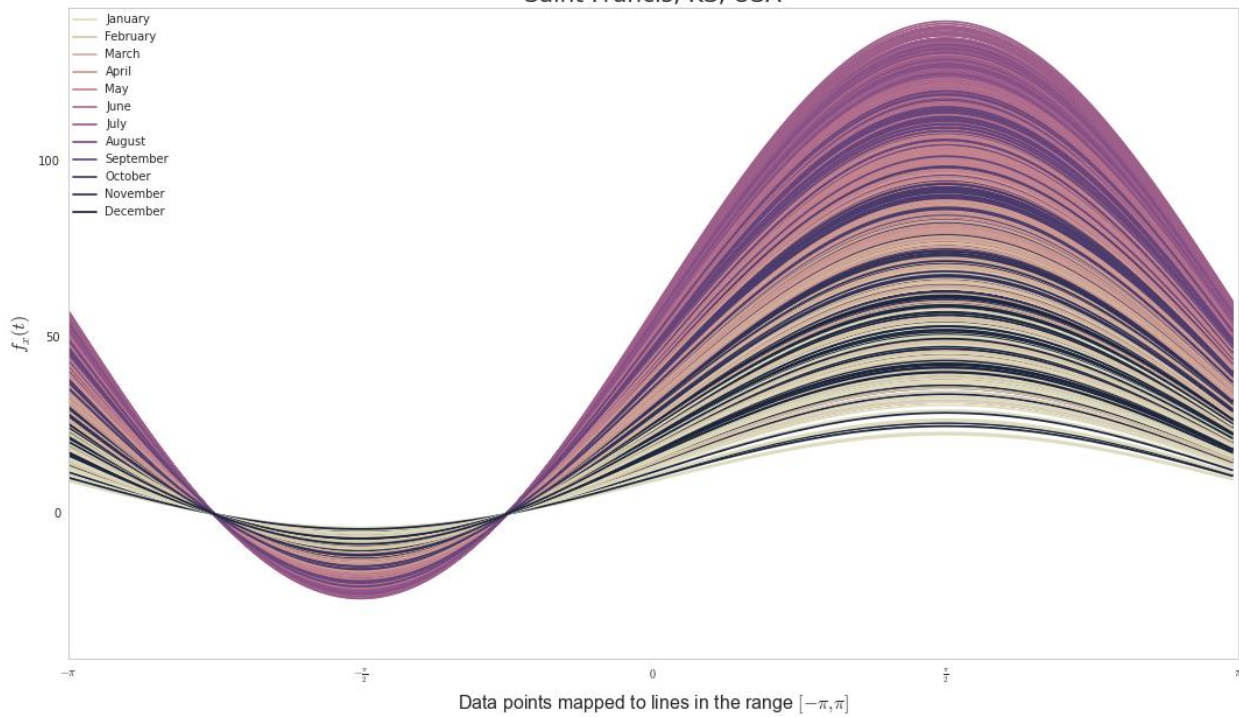
Mean Monthly Temperatures, 1894-2013
Saint Francis, KS, USA

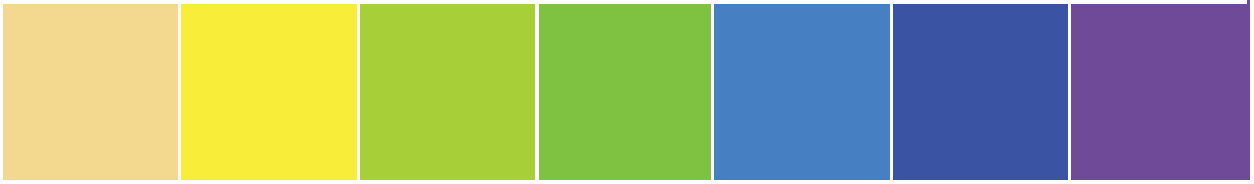


Violin Plots
Mean Monthly Temperatures, 1894-2013
Saint Francis, KS, USA

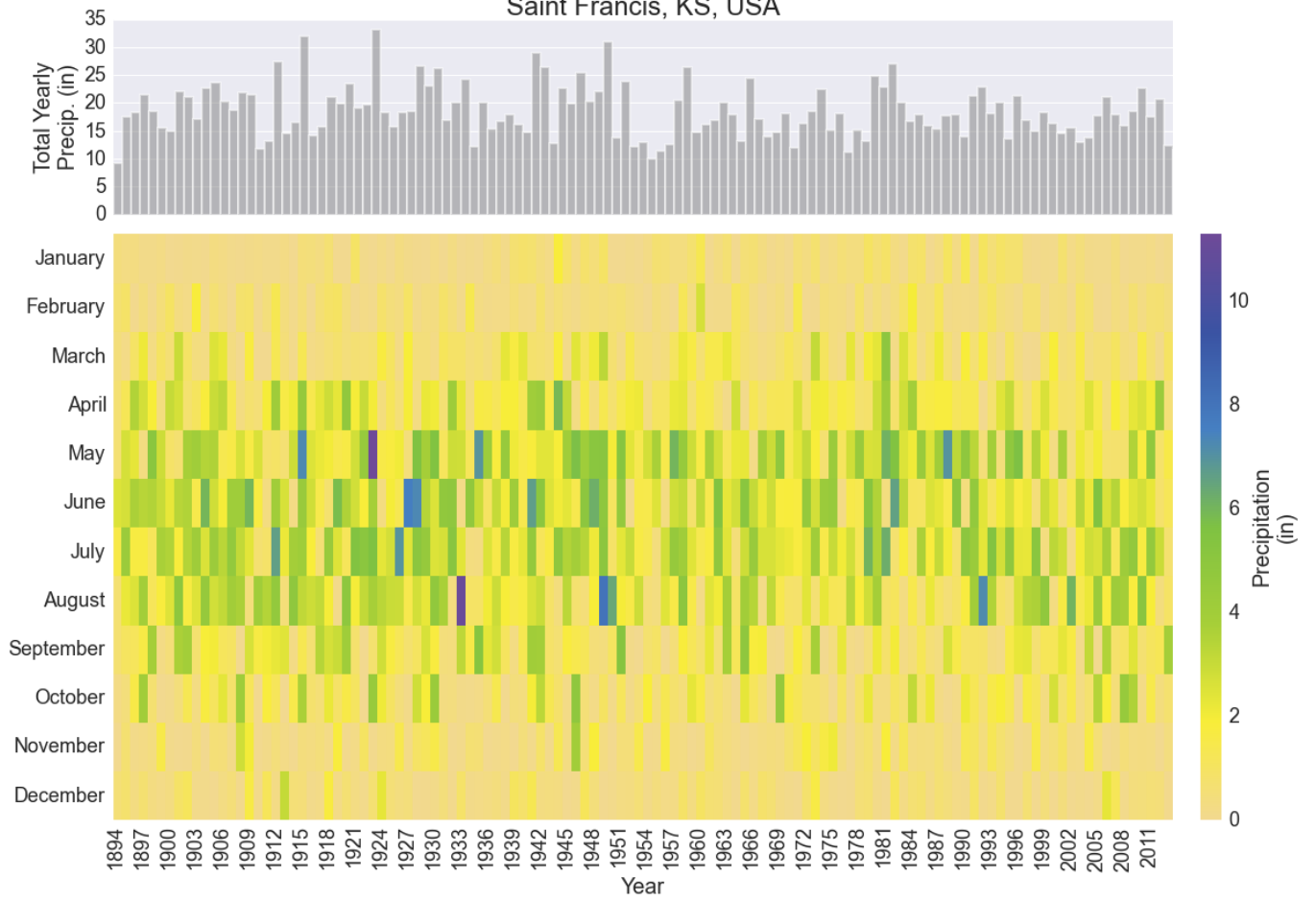


Andrews Curves for
Mean Monthly Temperatures, 1894-2013
Saint Francis, KS, USA

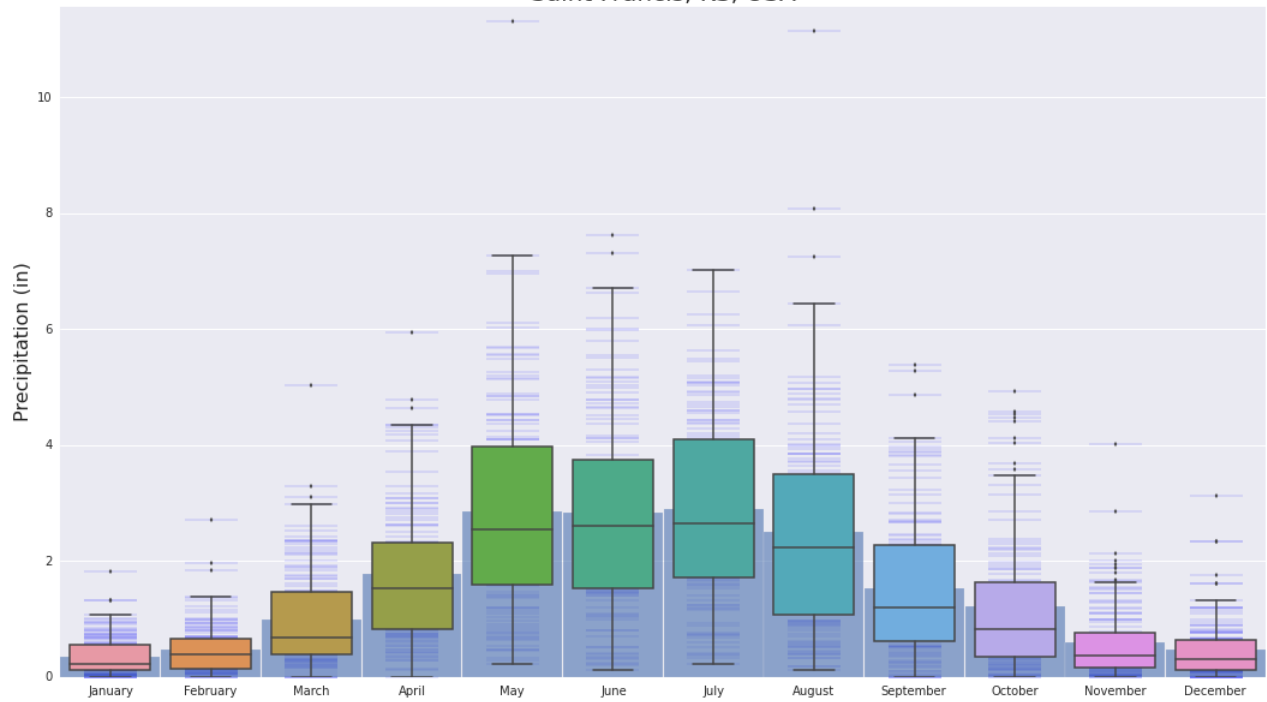




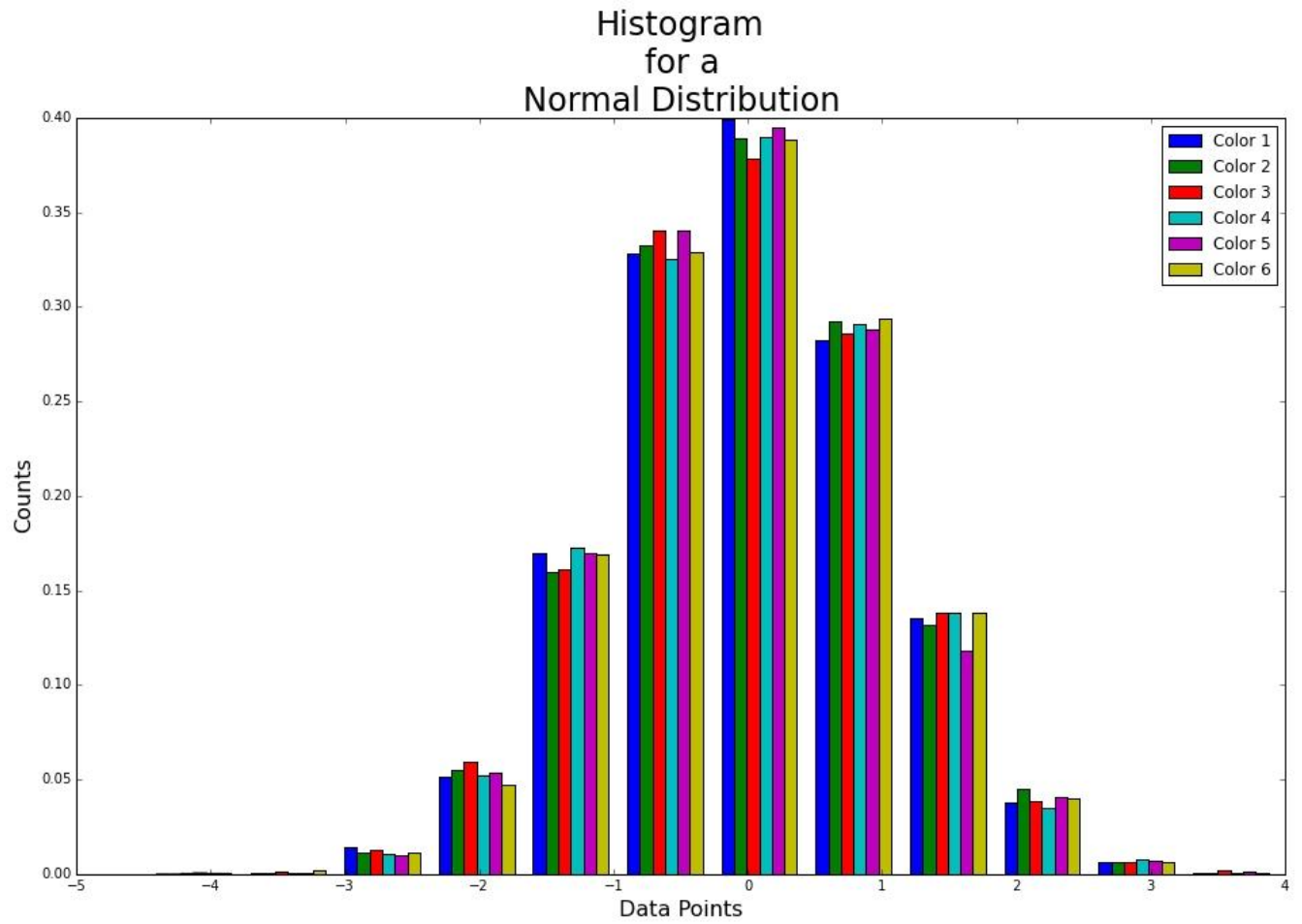
Heat Map with Histogram
 Mean Monthly Precipitation, 1894-2013
 Saint Francis, KS, USA



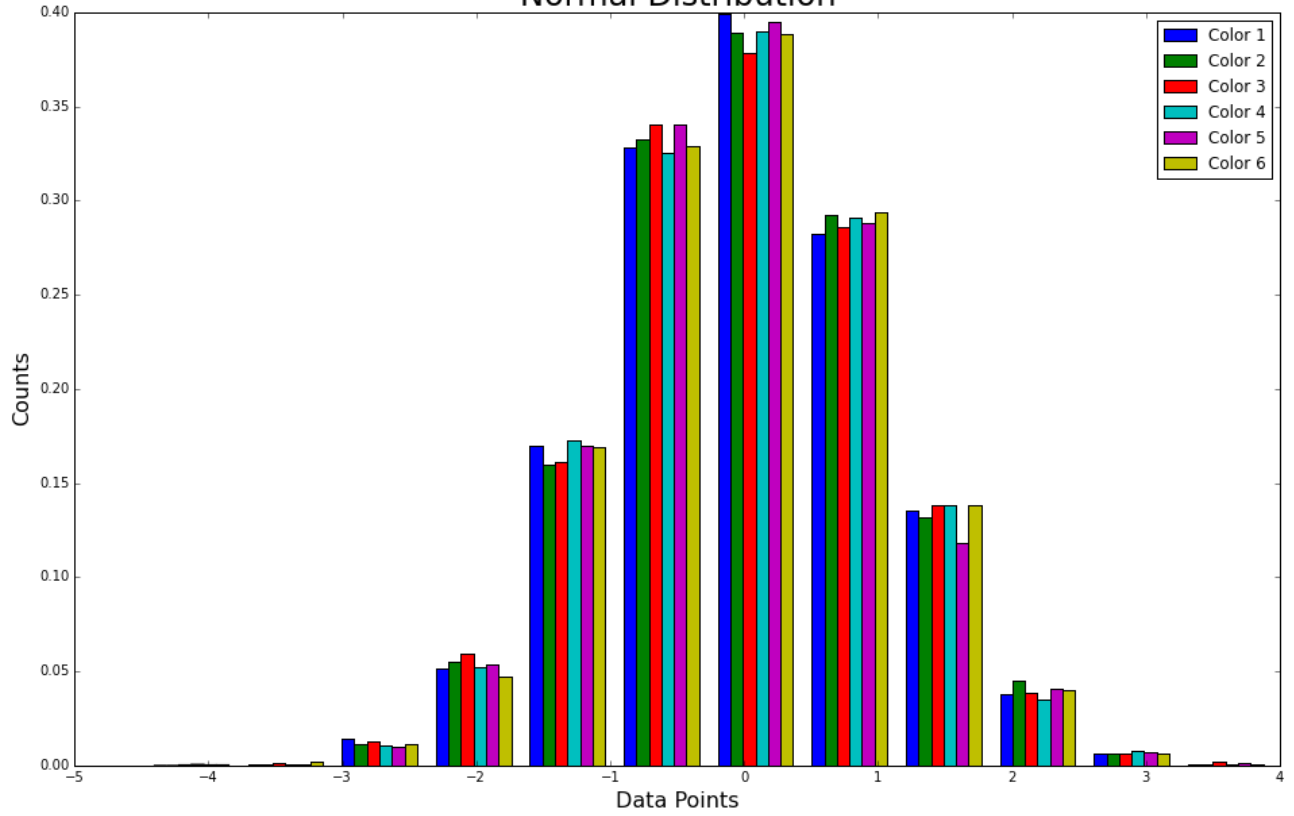
Mean Monthly Precipitation from 1894-2013
Saint Francis, KS, USA

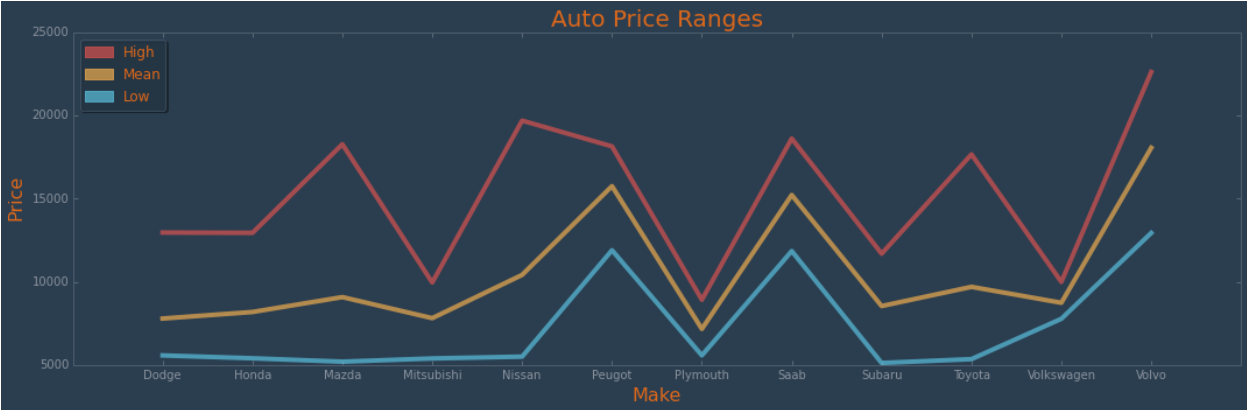
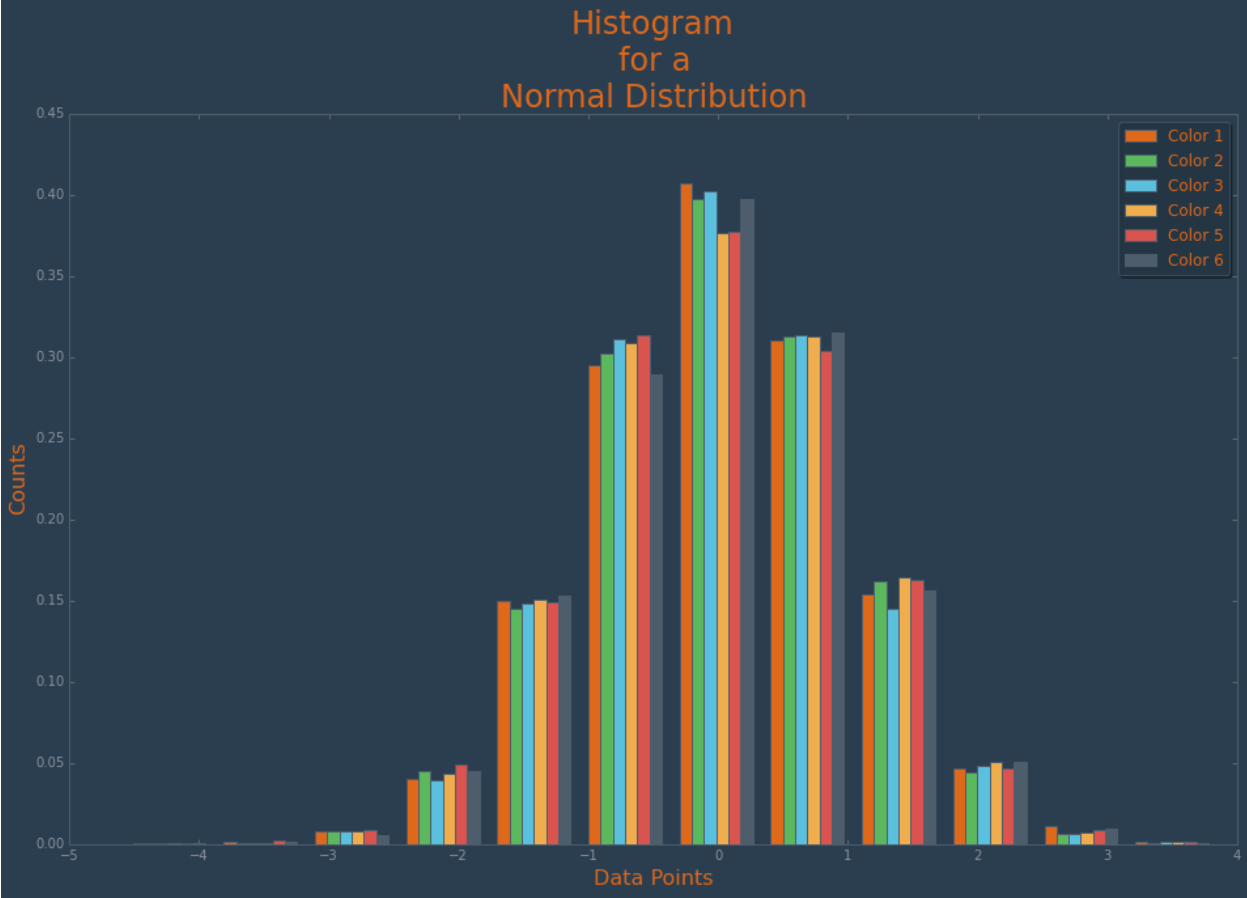


Chapter 6: Customization and Configuration



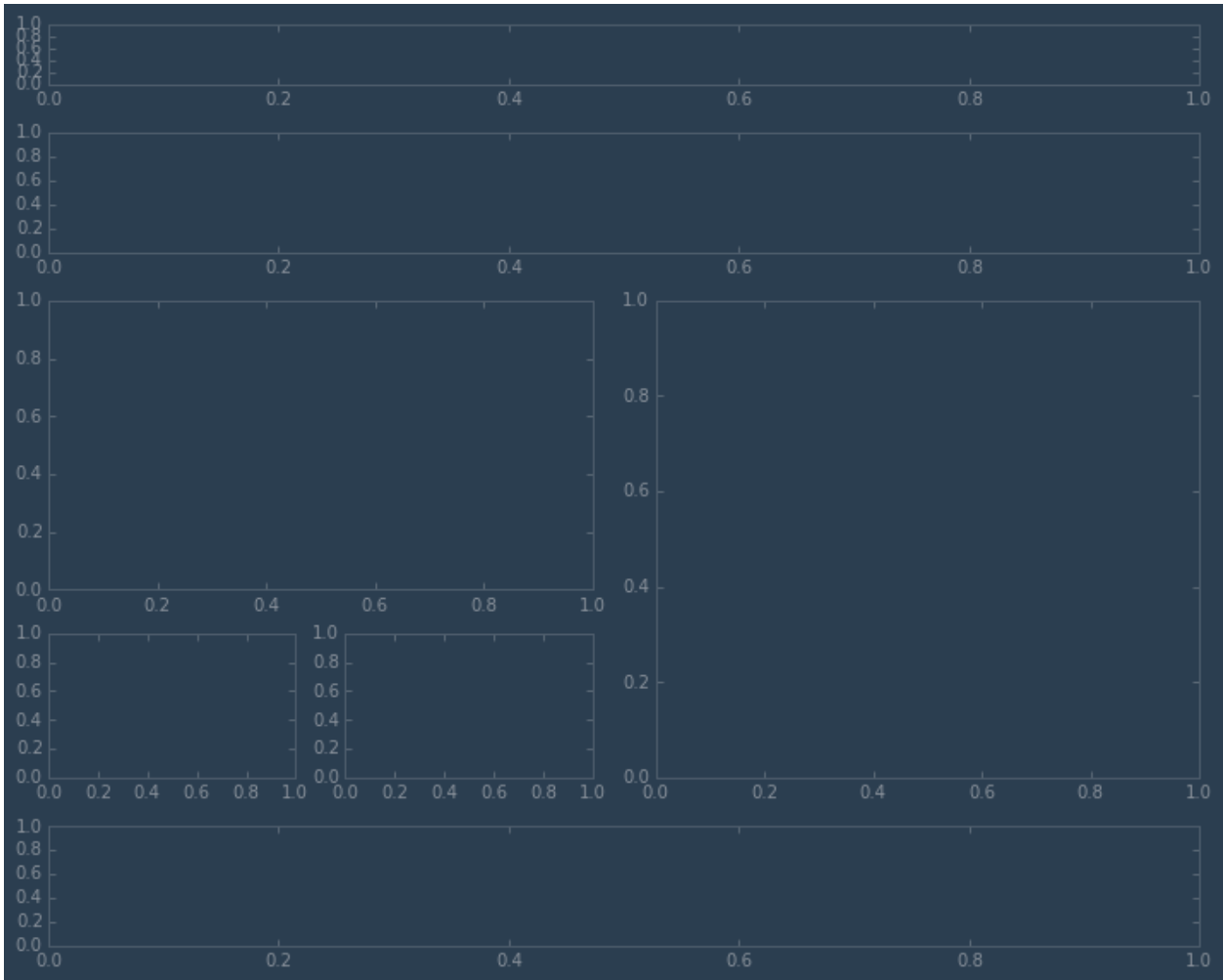
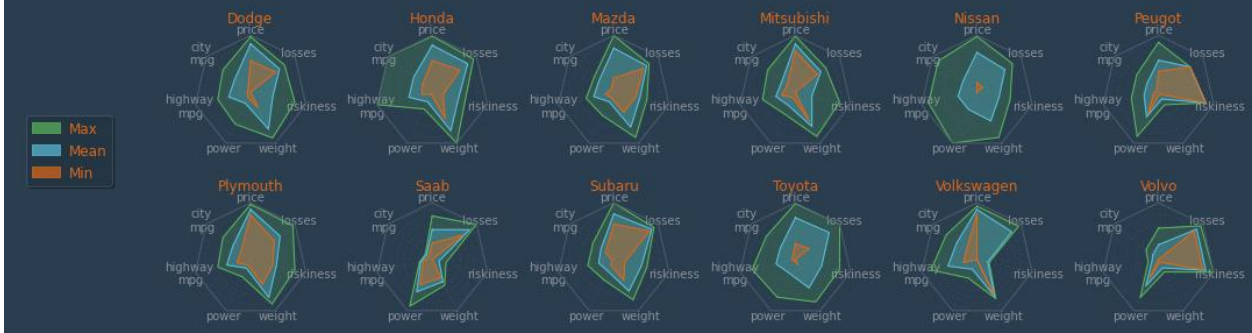
Histogram
for a
Normal Distribution



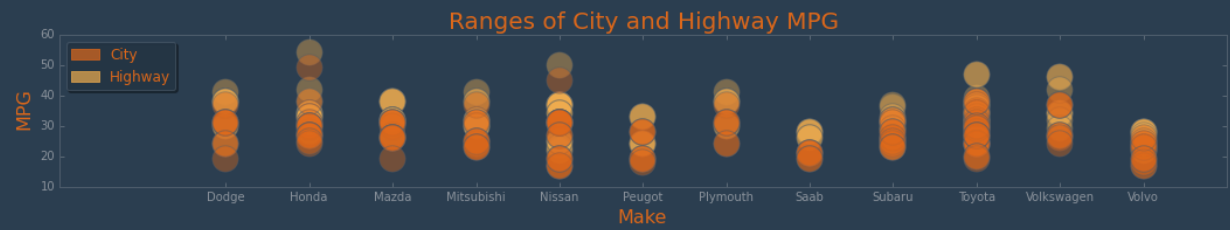
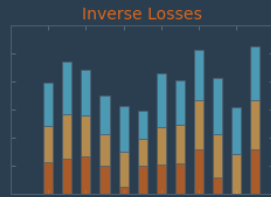
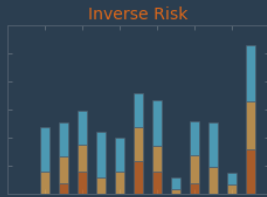
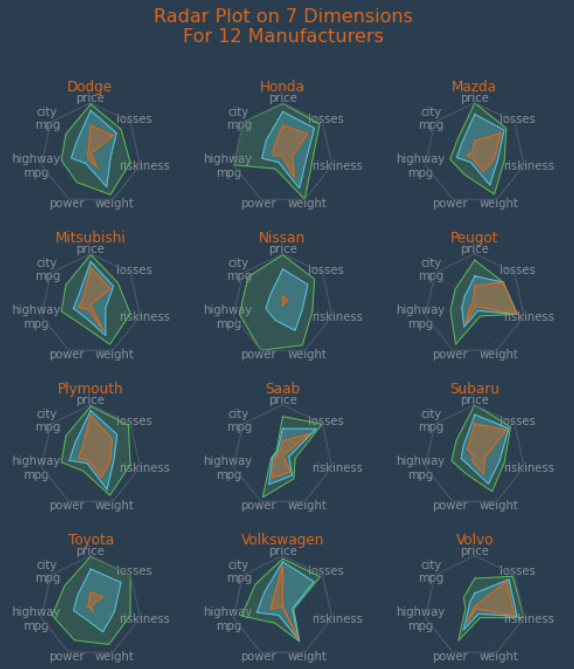
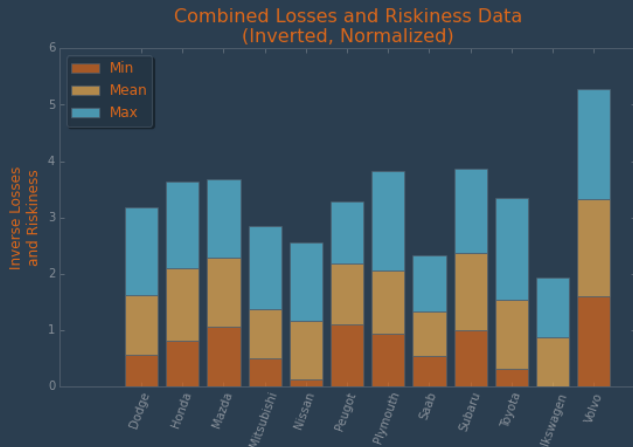
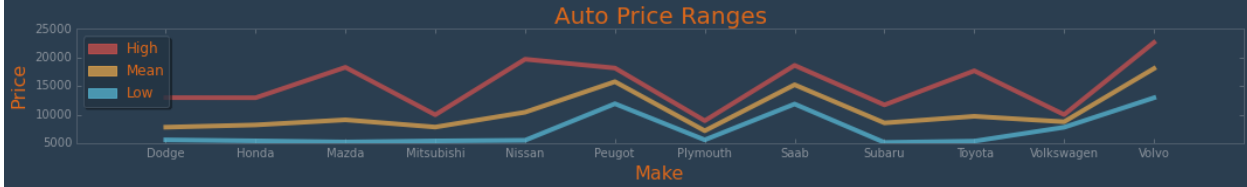




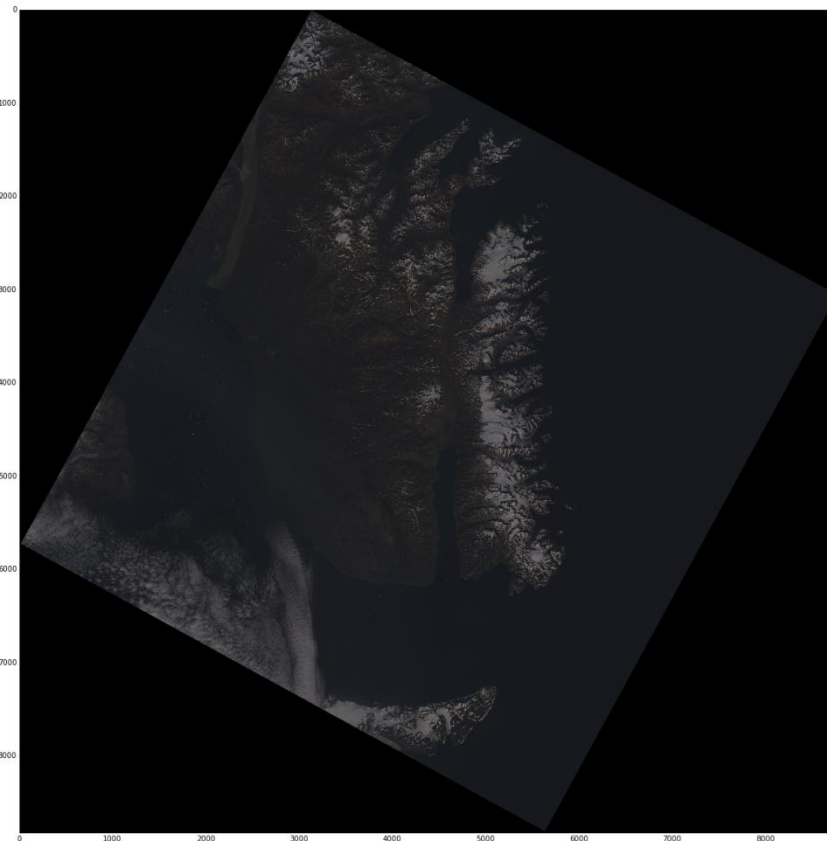
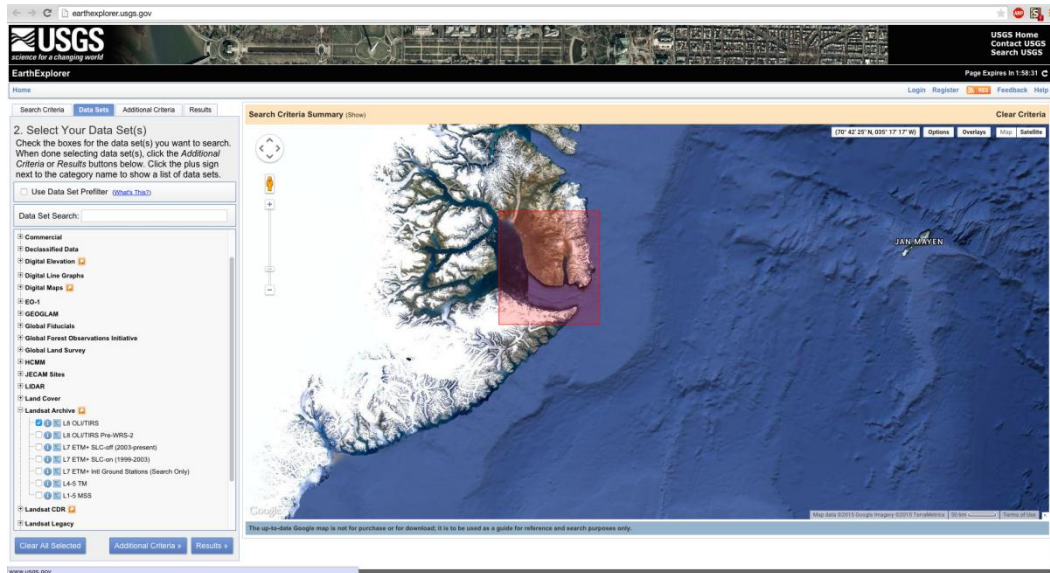
Radar Plot on 7 Dimensions For 12 Manufacturers

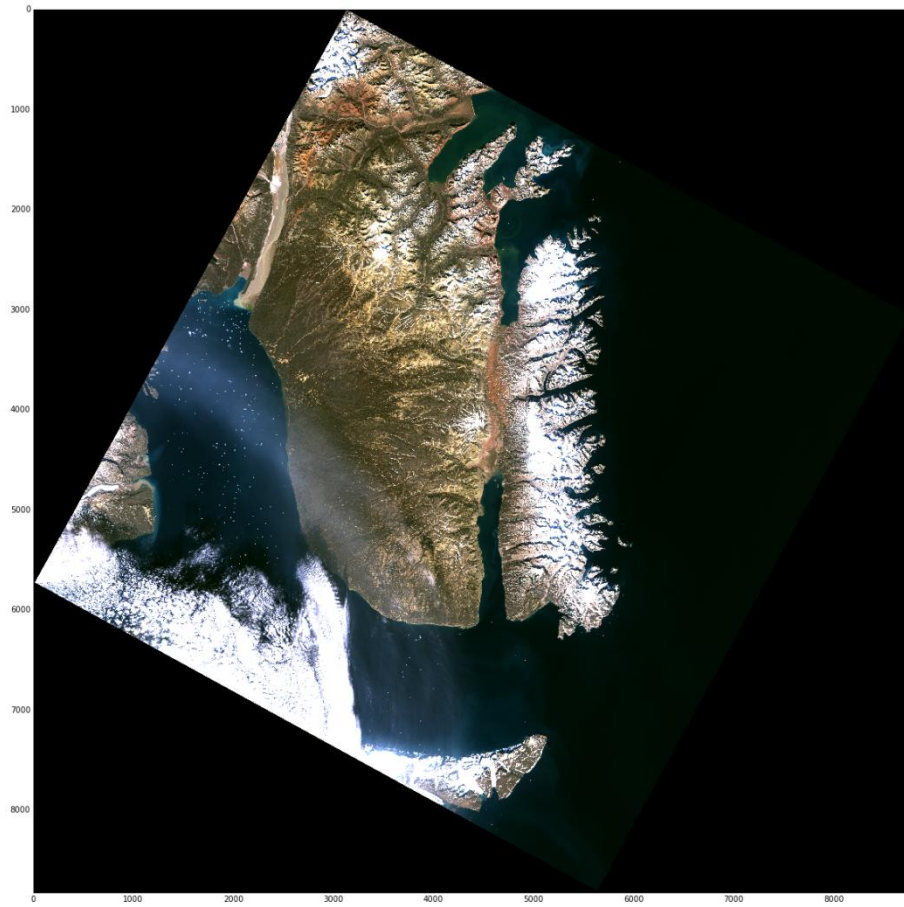
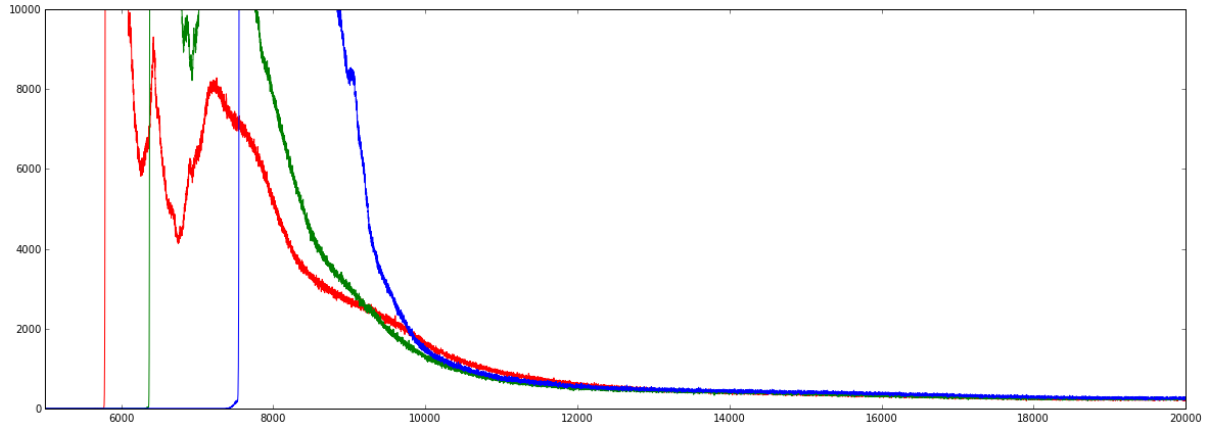


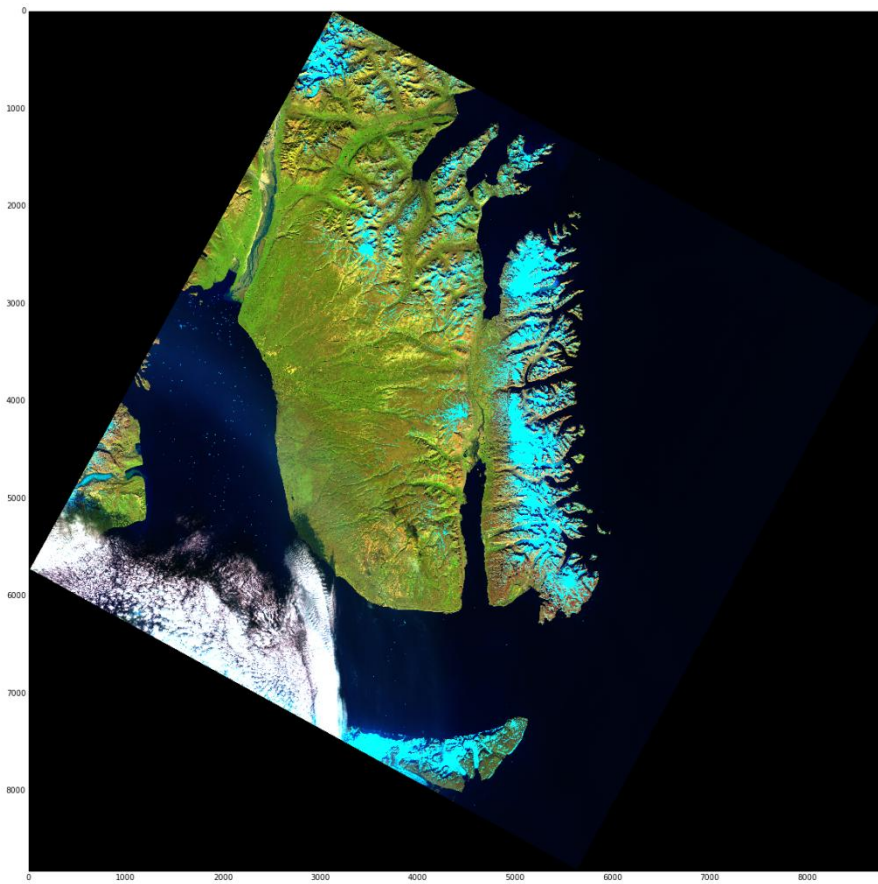
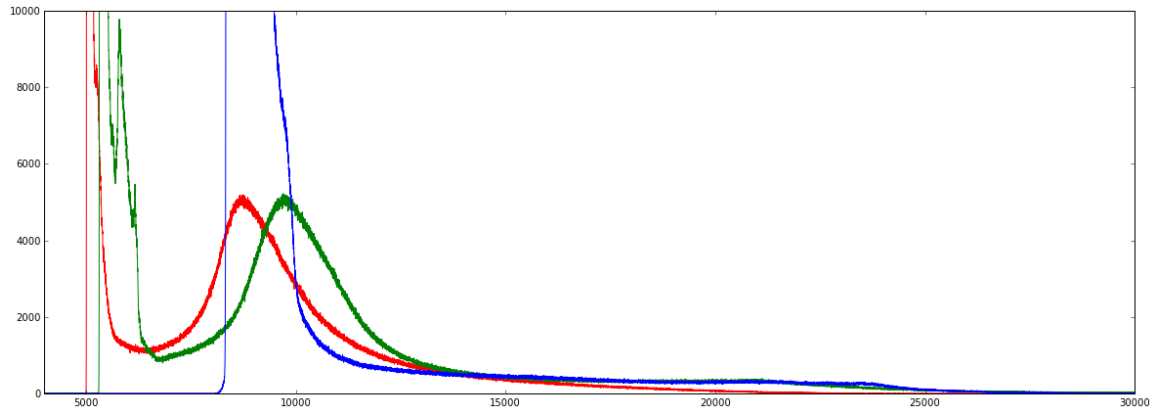
Demo Plots for 1985 Auto Maker Data



Chapter 7: Deploying matplotlib in Cloud Environments







Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

Your instance configuration is not eligible for the free usage tier

Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

[Don't show me this again](#)

Improve your instances' security. Your security group, SSH Only, is open to the world.

To launch an instance that's eligible for the free usage tier, check your AMI selection, instance type, configuration options, or storage devices. Learn more about [free usage tier eligibility](#) and usage restrictions.

AMI Details [Edit AMI](#)

Ubuntu Server 14.04 LTS (HVM), SSD Volume Type - ami-29ebb519
 Ubuntu Server 14.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).
Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
m3.xlarge	13	4	15	2 x 40	Yes	High

Security Groups [Edit security groups](#)

Security Group ID	Name	Description
sg-72603c41	SSH Only	Only allow in-bound SSH connections

All selected security groups inbound rules

Security Group ID	Type	Protocol	Port Range	Source
sg-72603c41	SSH	TCP	22	0.0.0.0/0

© 2008 - 2015, Amazon Web Services, Inc. or its affiliates. All rights reserved. [Privacy Policy](#) [Terms of Use](#) [Feedback](#)

Bucket: scoresbysund

Bucket: scoresbysund
 Region: Oregon
 Creator Date: Mon Feb 23 13:34:02 GMT-0600 2015
 Owner: indians

Bucket Policy Editor

Policy for Bucket: "scoresbysund"

Add a new policy or edit an existing bucket policy in the text area below.

```

{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "ScoresbysundCORSConfiguration",
      "Effect": "Allow",
      "Principal": "*",
      "Action": "s3:*",
      "Resource": "arn:aws:s3::scoresbysund/*",
      "Condition": {
        "IpAddress": [
          {
            "aws:SourceIp": "54.188.220.199/32"
          }
        ]
      }
    }
  ]
}
  
```

[AWS Policy Generator](#) | [Secrets Bucket Policies](#)

Permissions

using access policies. For more information, see [Managing Access Permissions in the Amazon S3](#)

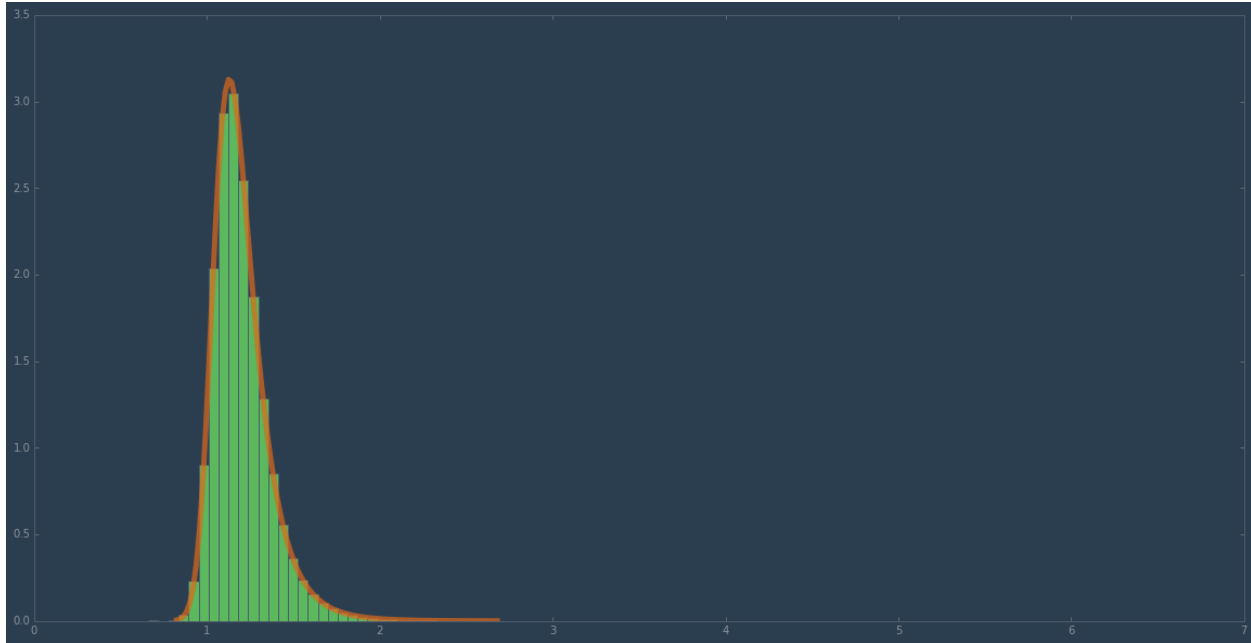
Add CORS Configuration

Tags

Requester Pays

© 2008 - 2015, Amazon Web Services, Inc. or its affiliates. All rights reserved. [Privacy Policy](#) [Terms of Use](#) [Feedback](#)

Chapter 8: matplotlib and Big Data



Activity Monitor (All Processes, Hierarchically)

CPU Memory Energy Disk Network

Q Search

Process Name	Memory	Compressed Mem	Real Mem	Private Mem	Shared Mem	Threads	Ports	PID	User
bash	1.4 MB	1.4 MB	272 KB	8 KB	760 KB	1	15	400	oubiwar
bash	1.4 MB	1.4 MB	448 KB	4 KB	760 KB	1	15	31807	oubiwar
▶ bash	1.3 MB	1.3 MB	500 KB	4 KB	760 KB	1	15	48234	oubiwar
▼ bash	1.2 MB	1.2 MB	408 KB	4 KB	760 KB	1	15	397	oubiwar
▼ make	540 KB	536 KB	364 KB	0 bytes	220 KB	1	9	58117	oubiwar
▼ make	504 KB	500 KB	364 KB	0 bytes	220 KB	1	9	58298	oubiwar
▼ sh	476 KB	472 KB	516 KB	0 bytes	220 KB	1	9	58299	oubiwar
▼ Python	39.1 MB	29.3 MB	13.7 MB	9.8 MB	18.9 MB	3	14	58300	oubiwar
Python	49.3 MB	24.6 MB	31.7 MB	24.5 MB	18.9 MB	8	19	72392	oubiwar
▶ bash	1.2 MB	1.2 MB	148 KB	4 KB	760 KB	1	15	403	oubiwar
bash	1.2 MB	1.2 MB	428 KB	4 KB	760 KB	1	15	29710	oubiwar
bash	1.2 MB	1.2 MB	504 KB	4 KB	760 KB	1	15	82983	oubiwar
▶ bash	1.2 MB	1.2 MB	264 KB	4 KB	760 KB	1	15	7661	oubiwar
▶ bash	1.2 MB	1.2 MB	280 KB	4 KB	760 KB	1	15	48673	oubiwar
bash	1.2 MB	1.2 MB	92 KB	4 KB	760 KB	1	15	412	oubiwar
bash	1.2 MB	1.2 MB	468 KB	4 KB	760 KB	1	15	51037	oubiwar
bash	1.2 MB	1.2 MB	112 KB	4 KB	760 KB	1	15	27360	oubiwar
▶ bash	1.1 MB	1.1 MB	352 KB	4 KB	760 KB	1	15	394	oubiwar
bash	1.1 MB	956 KB	712 KB	468 KB	760 KB	1	15	48936	oubiwar
bash	1.1 MB	1.1 MB	8 KB	4 KB	760 KB	1	15	409	oubiwar
bash	1.1 MB	938 KB	468 KB	468 KB	760 KB	1	15	388	oubiwar

Physical Memory: 8.00 GB

Memory Used: 7.98 GB

Virtual Memory: 18.45 GB

Swap Used: 3.15 GB

MEMORY PRESSURE

App Memory: 1.98 GB

File Cache: 545.8 MB

Wired Memory: 2.71 GB

Compressed: 2.76 GB

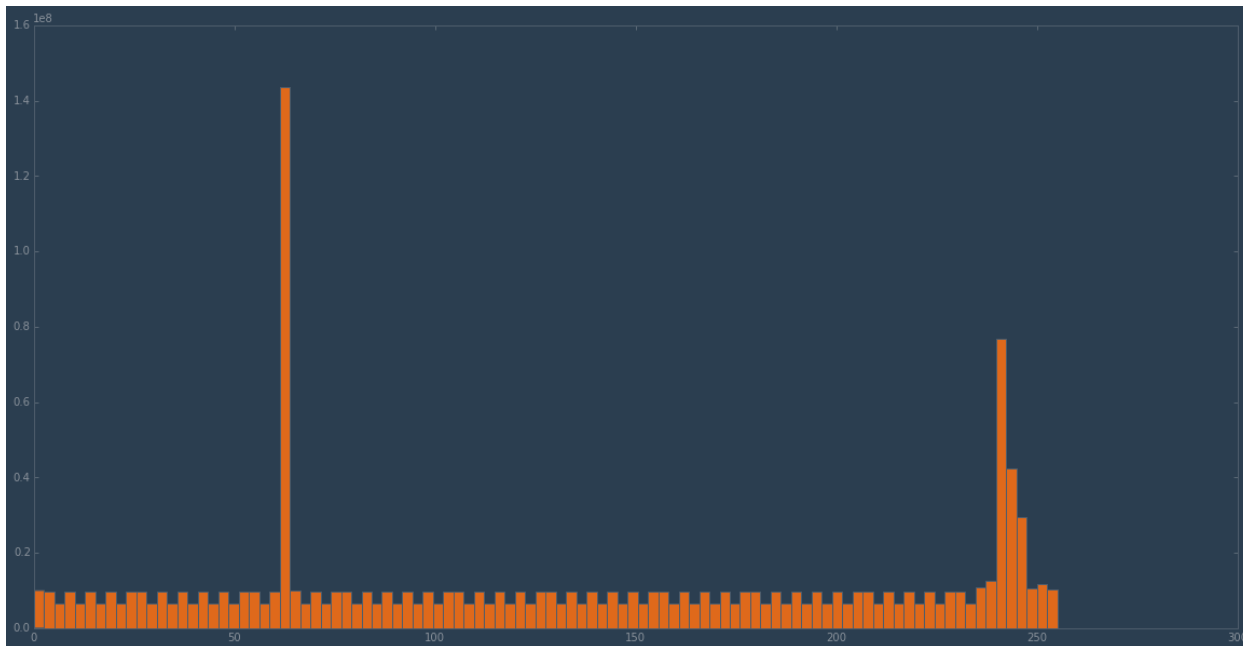
Activity Monitor (All Processes, Hierarchically)

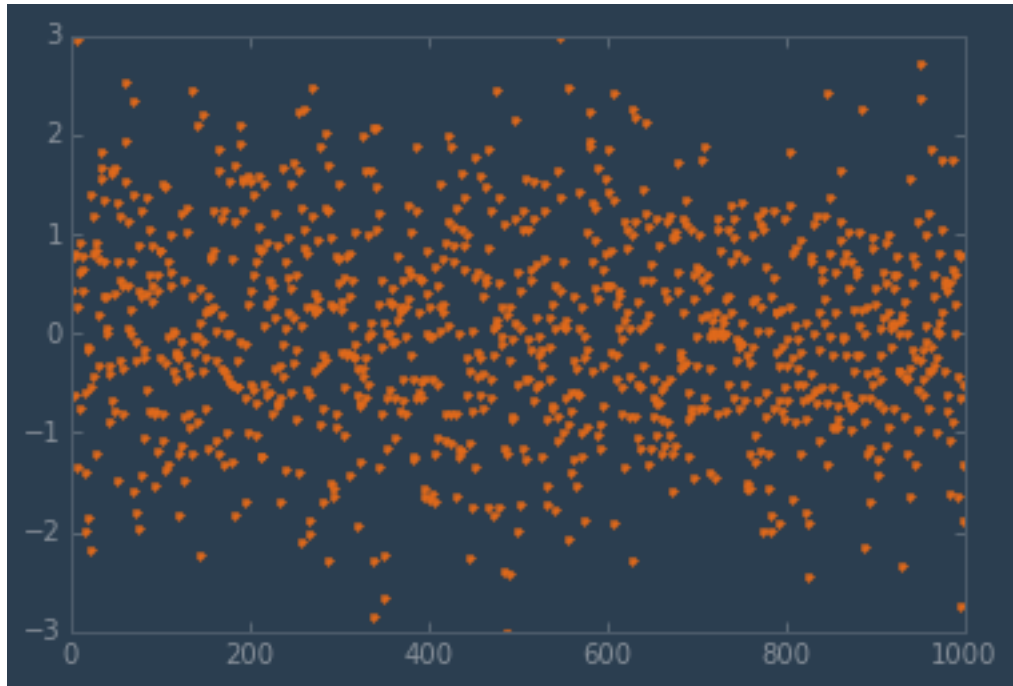
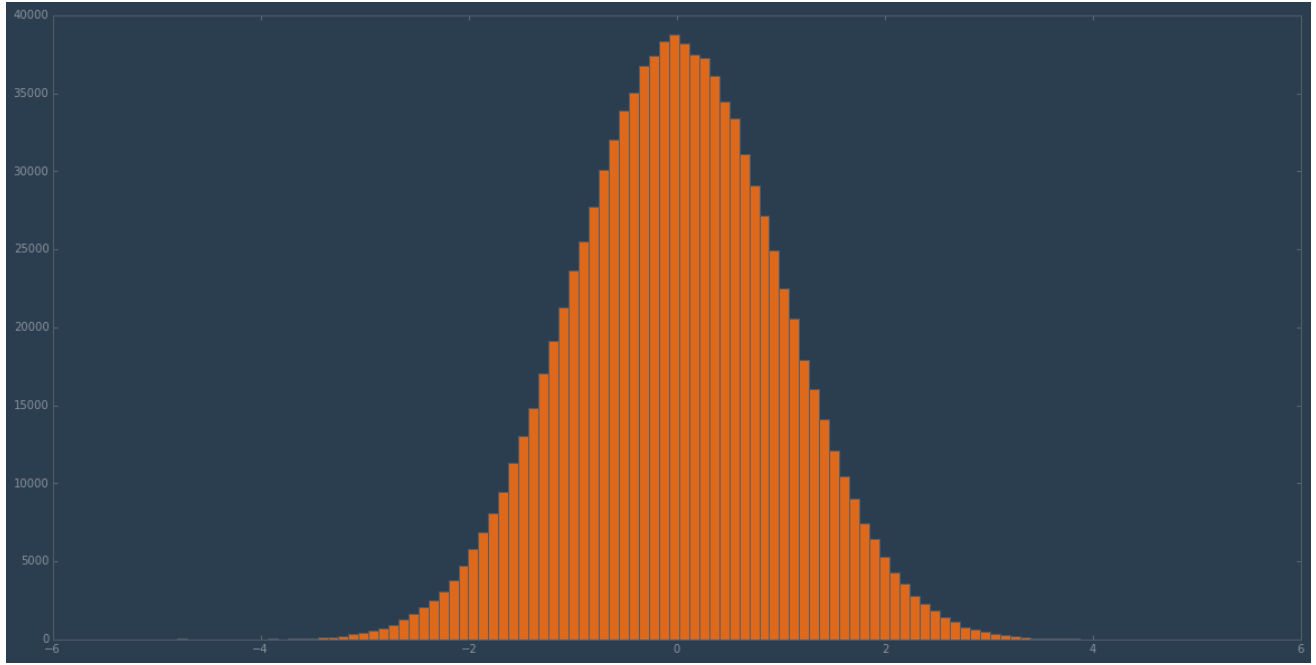
CPU Memory Energy Disk Network

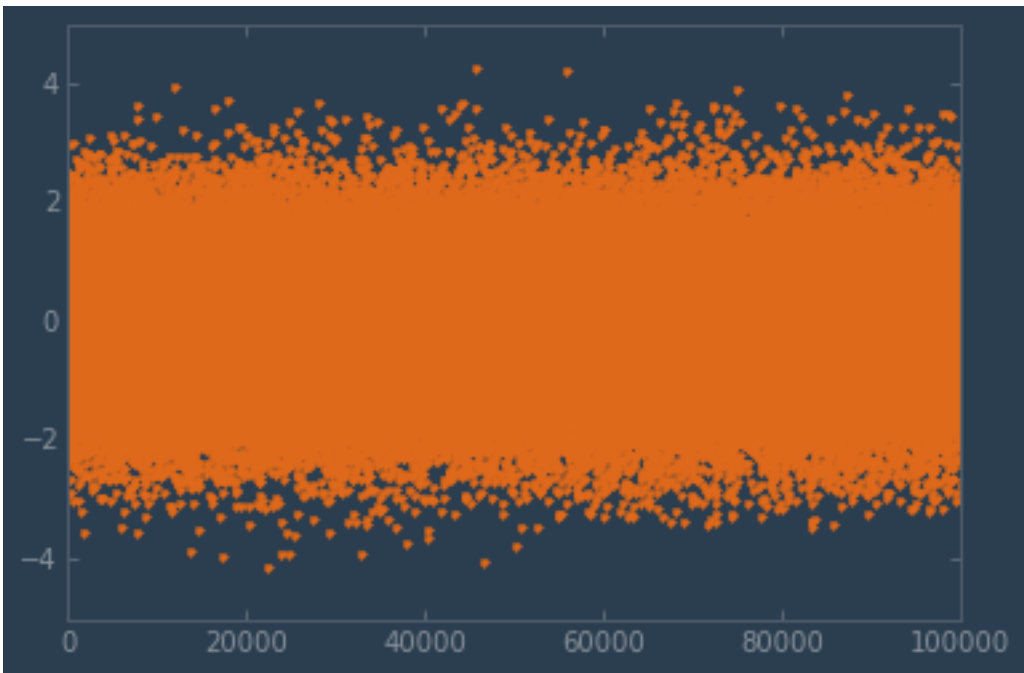
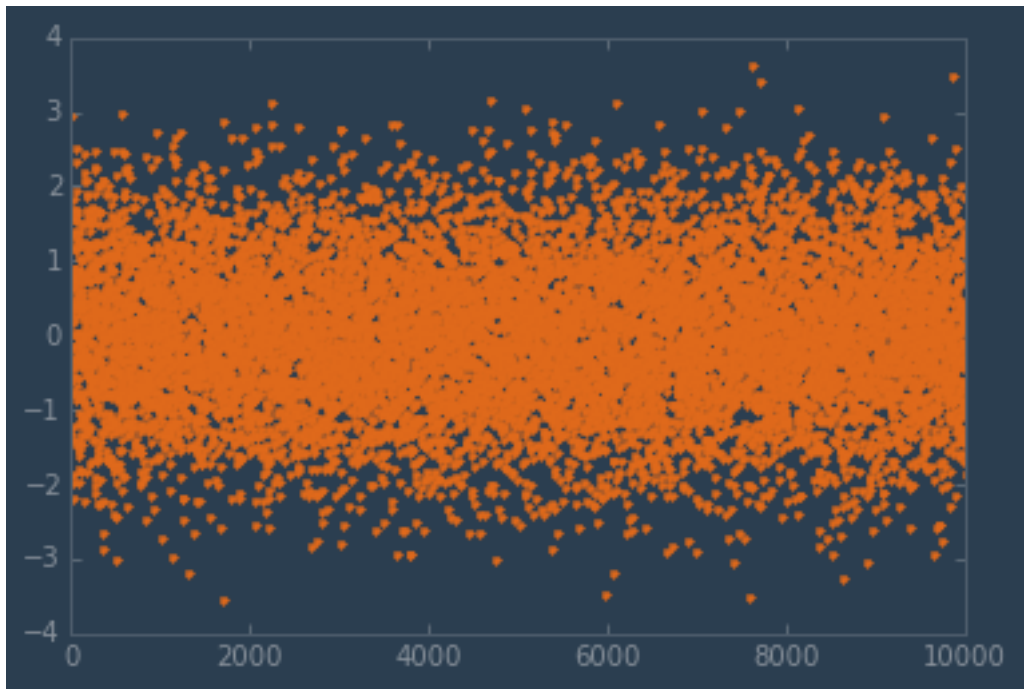
Q Search

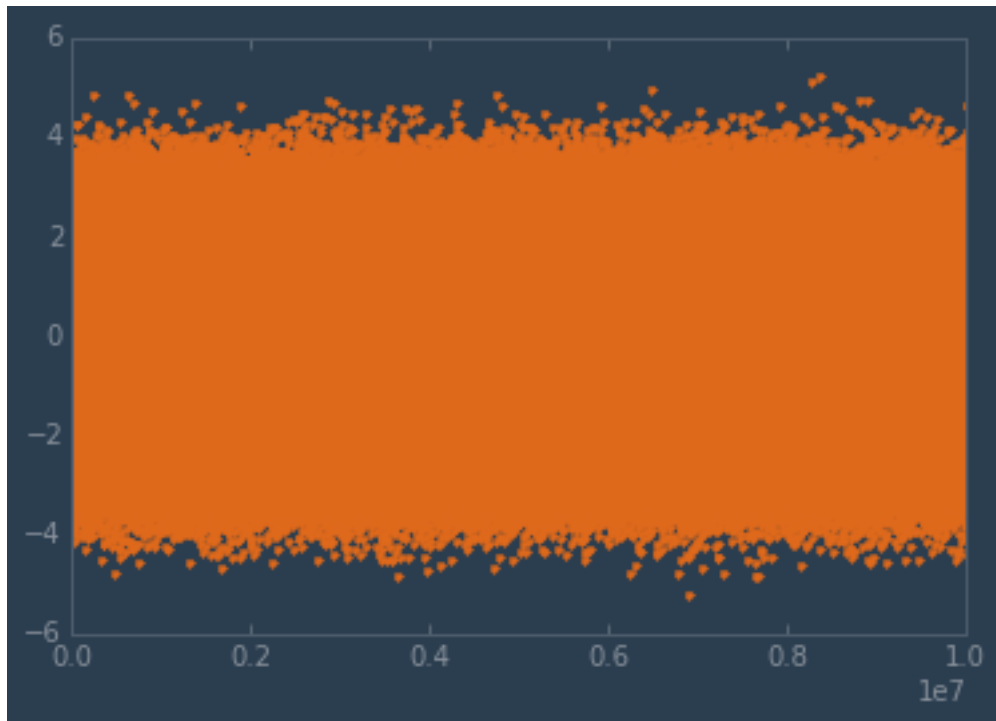
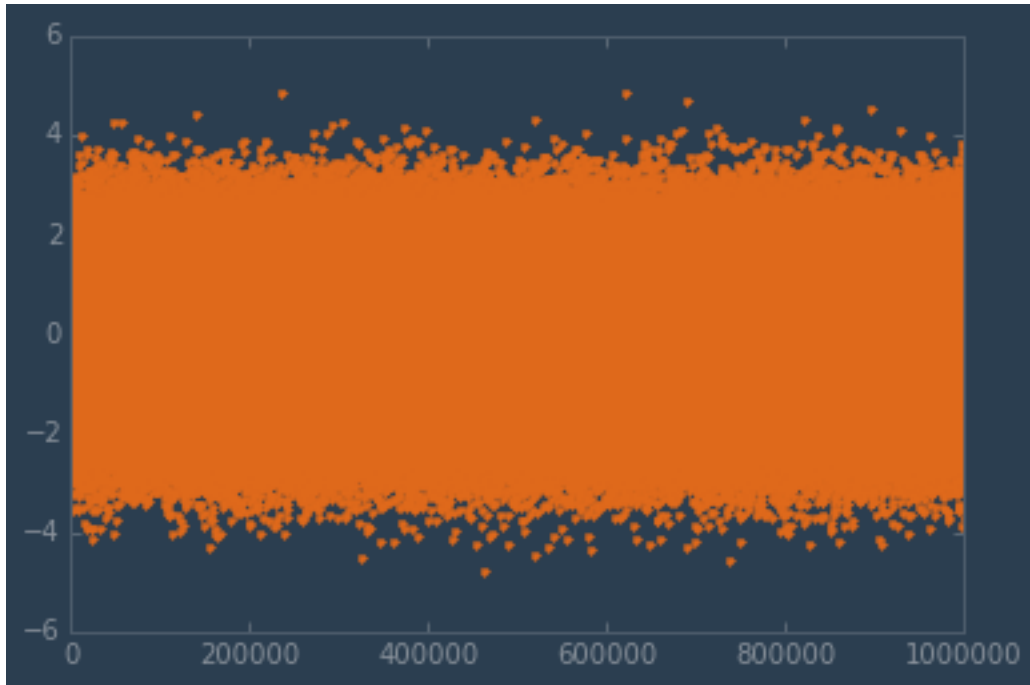
Process Name	Memory	Compressed Mem	Real Mem	Private Mem	Shared Mem	Threads	Ports	PID	User
bash	1.4 MB	1.4 MB	272 KB	8 KB	760 KB	1	15	400	oubiwar
bash	1.4 MB	1.4 MB	448 KB	4 KB	760 KB	1	15	31807	oubiwar
▶ bash	1.3 MB	1.3 MB	500 KB	4 KB	760 KB	1	15	48234	oubiwar
▼ bash	1.2 MB	1.2 MB	408 KB	4 KB	760 KB	1	15	397	oubiwar
▼ make	540 KB	536 KB	364 KB	0 bytes	220 KB	1	9	58117	oubiwar
▼ make	504 KB	500 KB	364 KB	0 bytes	220 KB	1	9	58298	oubiwar
▼ sh	476 KB	472 KB	508 KB	0 bytes	220 KB	1	9	58299	oubiwar
▼ Python	39.7 MB	29.2 MB	14.4 MB	10.5 MB	18.9 MB	3	14	58300	oubiwar
Python	813.1 MB	537.9 MB	281.3 MB	275.2 MB	18.9 MB	11	22	72392	oubiwar
▶ bash	1.2 MB	1.2 MB	148 KB	4 KB	760 KB	1	15	403	oubiwar
bash	1.2 MB	1.2 MB	428 KB	4 KB	760 KB	1	15	29710	oubiwar
bash	1.2 MB	1.2 MB	500 KB	4 KB	760 KB	1	15	82983	oubiwar
▶ bash	1.2 MB	1.2 MB	264 KB	4 KB	760 KB	1	15	7661	oubiwar
▶ bash	1.2 MB	1.2 MB	280 KB	4 KB	760 KB	1	15	48673	oubiwar
bash	1.2 MB	1.2 MB	92 KB	4 KB	760 KB	1	15	412	oubiwar
bash	1.2 MB	1.2 MB	468 KB	4 KB	760 KB	1	15	51037	oubiwar
bash	1.2 MB	1.2 MB	112 KB	4 KB	760 KB	1	15	27360	oubiwar
▶ bash	1.1 MB	1.1 MB	352 KB	4 KB	760 KB	1	15	394	oubiwar
bash	1.1 MB	1.1 MB	500 KB	4 KB	760 KB	1	15	48936	oubiwar
bash	1.1 MB	1.1 MB	8 KB	4 KB	760 KB	1	15	409	oubiwar
bash	1.1 MB	1.1 MB	252 KB	4 KB	760 KB	1	15	388	oubiwar

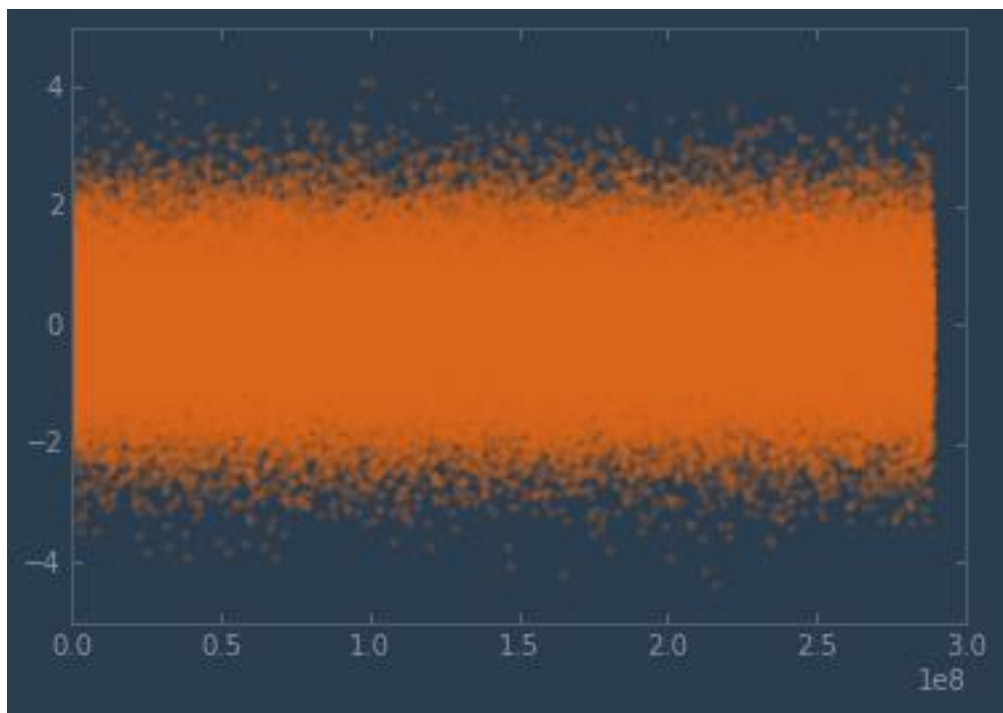
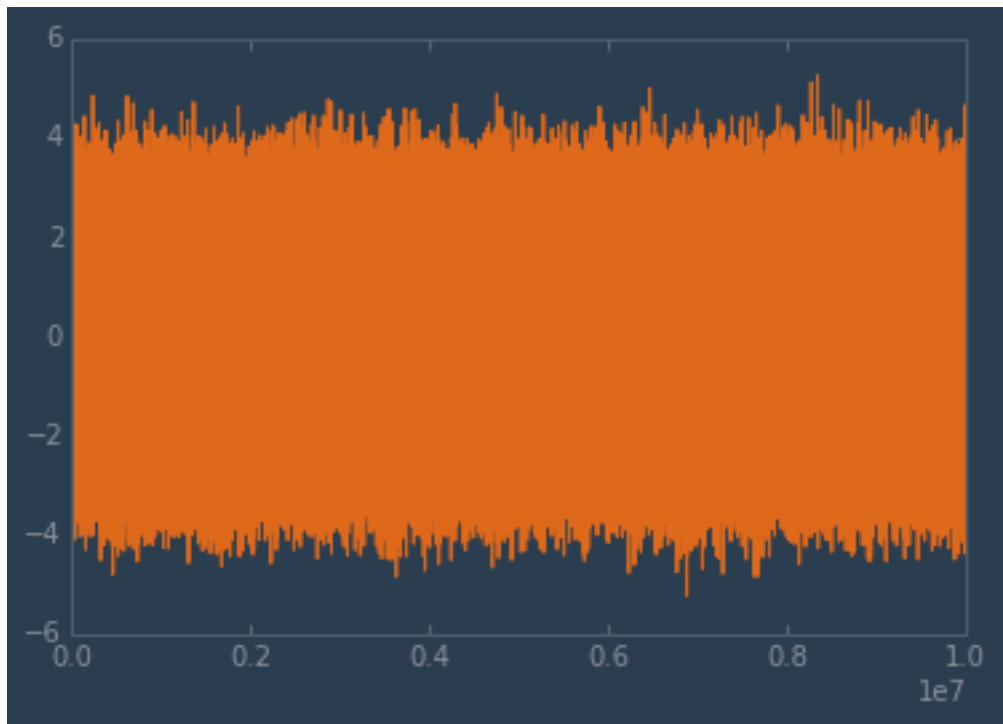
Physical Memory:	8.00 GB	MEMORY PRESSURE	App Memory:	1.40 GB
Memory Used:	7.52 GB		File Cache:	593.1 MB
Virtual Memory:	19.57 GB		Wired Memory:	2.71 GB
Swap Used:	3.93 GB		Compressed:	2.82 GB











Chapter 9: Clustering for matplotlib

Visualization of estimating π

