

main

August 31, 2021

1 Heatmap of sharing

```
[1]: import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
from rpy2.robjects import r, pandas2ri
```

```
[2]: pandas2ri.activate()
```

1.1 Sign match only

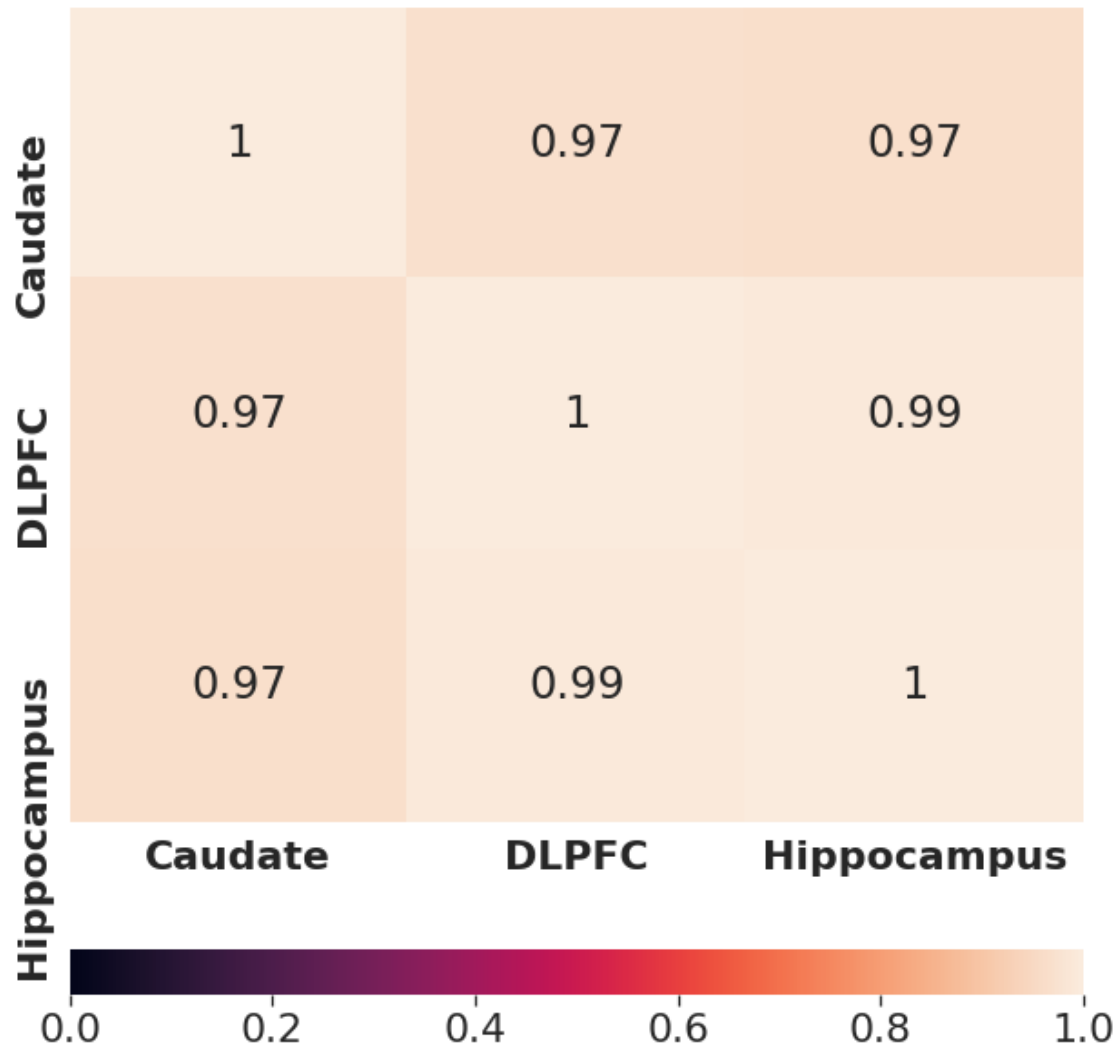
1.1.1 Genes

```
[3]: mat = r('load("../_m/genes/mashr_meta_results.RData"); mashr::
  ↳get_pairwise_sharing(m2, factor=0)')
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],
                  columns=["Caudate", "DLPFC", "Hippocampus"])
df
```

```
[3]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.969558	0.967383
DLPFC	0.969558	1.000000	0.994263
Hippocampus	0.967383	0.994263	1.000000

```
[4]: sns.set(font_scale=2)
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,
                    annot=True, cbar_ax=cbar_ax,
                    cbar_kws={"orientation": "horizontal"})
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")
sns_plot = chart.get_figure()
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_gene.pdf")
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_gene.png")
```



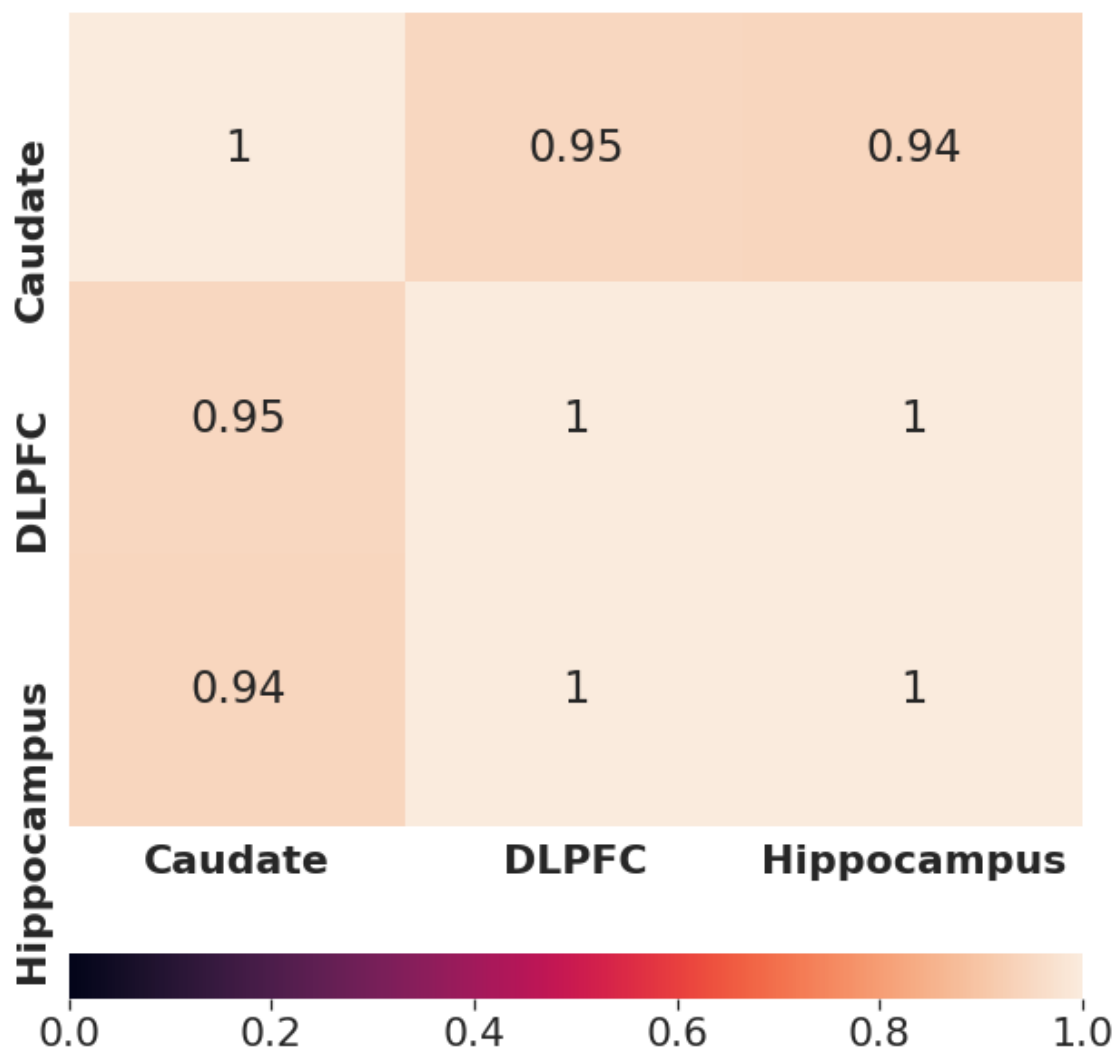
1.1.2 Transcripts

```
[5]: mat = r('load("../_m/transcripts/mashr_meta_results.RData"); mashr::
  ↳get_pairwise_sharing(m2, factor=0)')
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],
  columns=["Caudate", "DLPFC", "Hippocampus"])
df
```

```
[5]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.948124	0.944976
DLPFC	0.948124	1.000000	0.997198
Hippocampus	0.944976	0.997198	1.000000

```
[6]: sns.set(font_scale=2)
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,
                    annot=True, cbar_ax=cbar_ax,
                    cbar_kws={"orientation": "horizontal"})
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")
sns_plot = chart.get_figure()
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_tx.pdf")
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_tx.png")
```



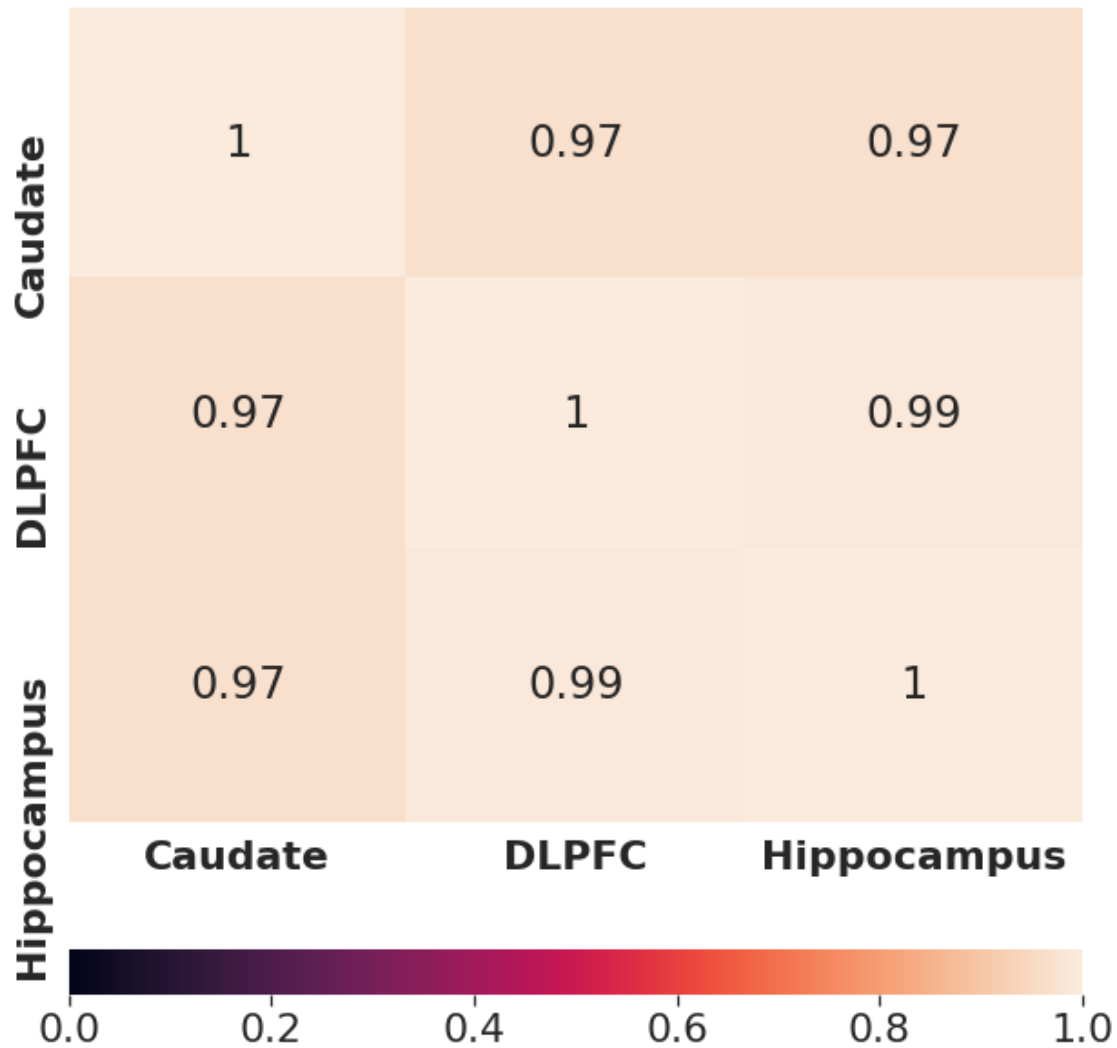
1.1.3 Exons

```
[7]: mat = r(''load("../_m/exons/mashr_meta_results.RData"); mashr::  
  ↳get_pairwise_sharing(m2, factor=0)''')  
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],  
                  columns=["Caudate", "DLPFC", "Hippocampus"])  
df
```

```
[7]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.971796	0.970370
DLPFC	0.971796	1.000000	0.994988
Hippocampus	0.970370	0.994988	1.000000

```
[8]: sns.set(font_scale=2)  
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}  
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))  
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,  
                    annot=True, cbar_ax=cbar_ax,  
                    cbar_kws={"orientation": "horizontal"})  
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")  
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")  
sns_plot = chart.get_figure()  
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_exon.pdf")  
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_exon.png")
```



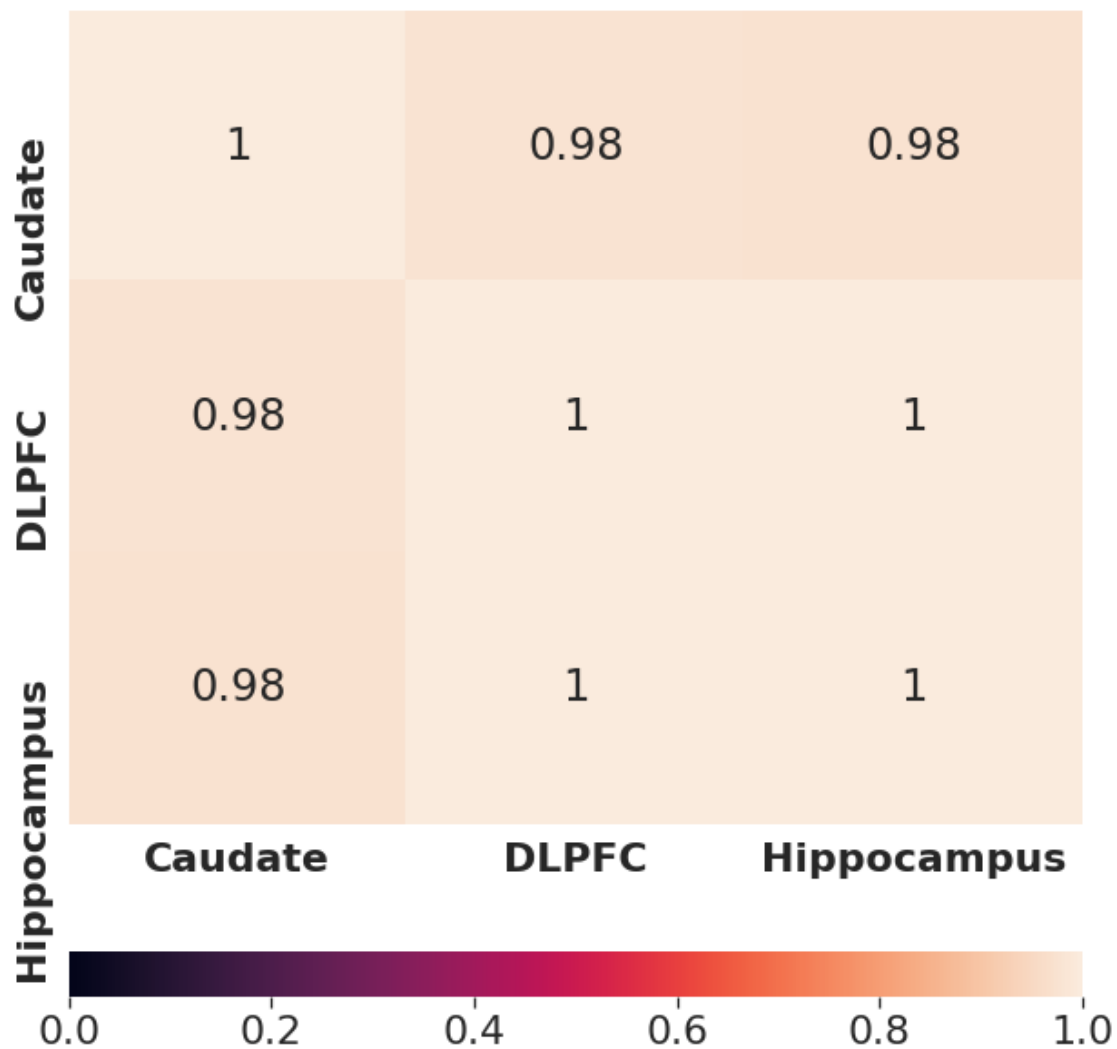
1.1.4 Junctions

```
[9]: mat = r('load("../_m/junctions/mashr_meta_results.RData"); mashr::
      ↪get_pairwise_sharing(m2, factor=0)')
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],
                  columns=["Caudate", "DLPFC", "Hippocampus"])
df
```

```
[9]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.978221	0.975826
DLPFC	0.978221	1.000000	0.997866
Hippocampus	0.975826	0.997866	1.000000

```
[10]: sns.set(font_scale=2)
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,
                    annot=True, cbar_ax=cbar_ax,
                    cbar_kws={"orientation": "horizontal"})
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")
sns_plot = chart.get_figure()
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_jxn.pdf")
sns_plot.savefig("eQTL_sharing_heatmap_signOnly_jxn.png")
```



1.2 Factor 0.5

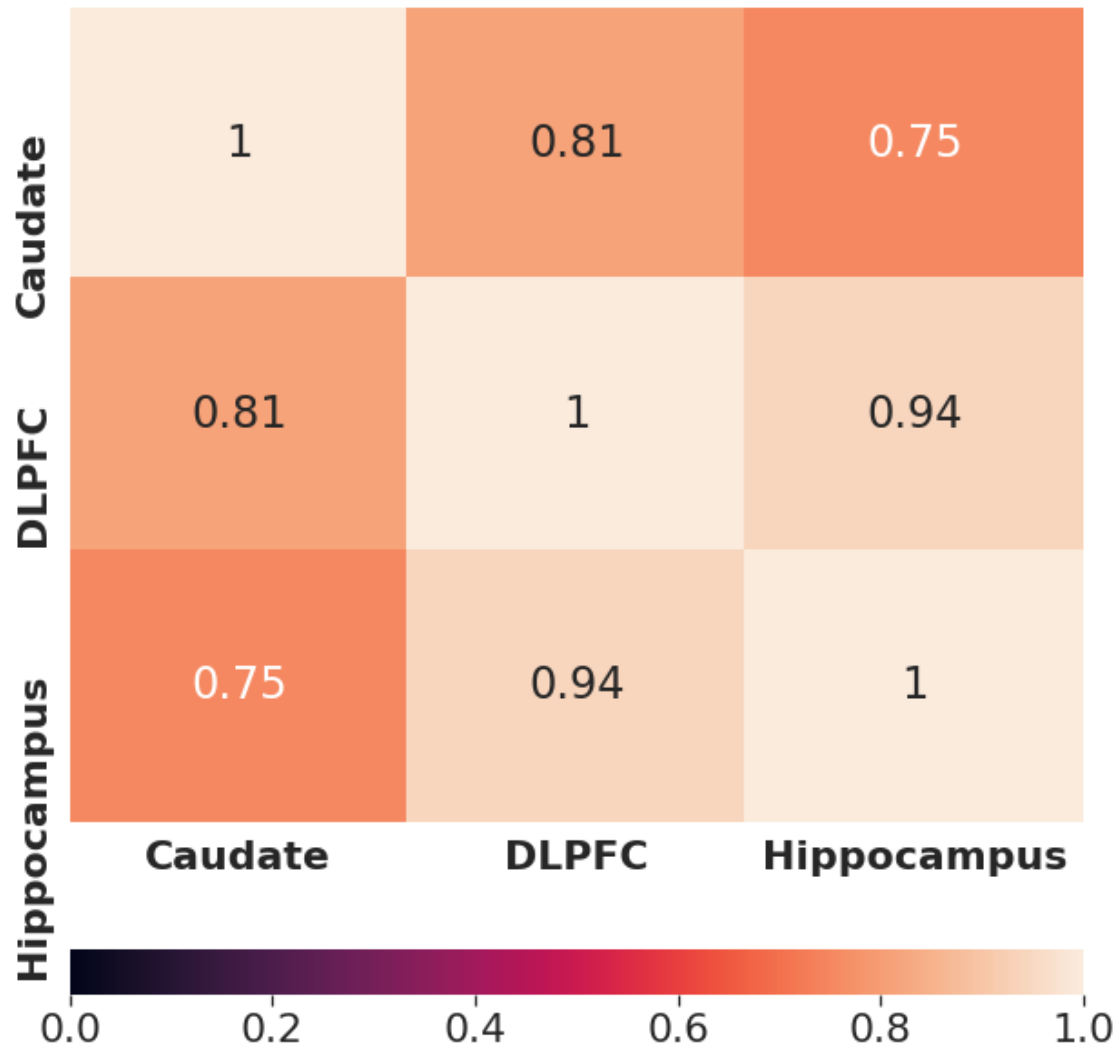
1.2.1 Genes

```
[11]: mat = r(''load("../_m/genes/mashr_meta_results.RData"); mashr::  
  ↳get_pairwise_sharing(m2)''')  
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],  
                  columns=["Caudate", "DLPFC", "Hippocampus"])  
df
```

```
[11]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.813209	0.750704
DLPFC	0.813209	1.000000	0.944953
Hippocampus	0.750704	0.944953	1.000000

```
[12]: sns.set(font_scale=2)  
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}  
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))  
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,  
                    annot=True, cbar_ax=cbar_ax,  
                    cbar_kws={"orientation": "horizontal"})  
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")  
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")  
sns_plot = chart.get_figure()  
sns_plot.savefig("eQTL_sharing_heatmap_gene.pdf")  
sns_plot.savefig("eQTL_sharing_heatmap_gene.png")
```



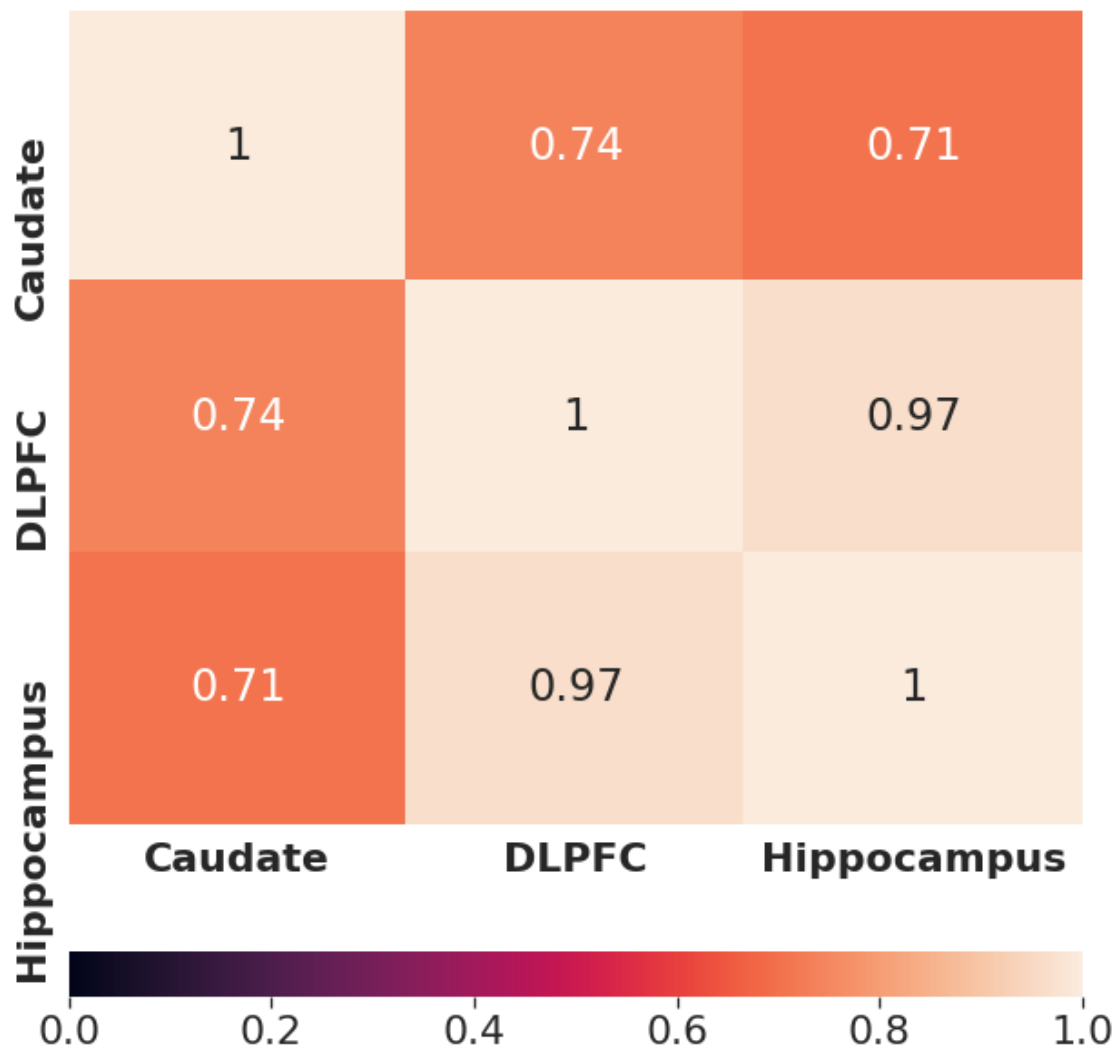
1.2.2 Transcripts

```
[13]: mat = r('load("../_m/transcripts/mashr_meta_results.RData"); mashr::
      ↪get_pairwise_sharing(m2)')
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],
                  columns=["Caudate", "DLPFC", "Hippocampus"])
df
```

```
[13]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.739192	0.705800
DLPFC	0.739192	1.000000	0.968364
Hippocampus	0.705800	0.968364	1.000000


```
[14]: sns.set(font_scale=2)
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,
                    annot=True, cbar_ax=cbar_ax,
                    cbar_kws={"orientation": "horizontal"})
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")
sns_plot = chart.get_figure()
sns_plot.savefig("eQTL_sharing_heatmap_tx.pdf")
sns_plot.savefig("eQTL_sharing_heatmap_tx.png")
```



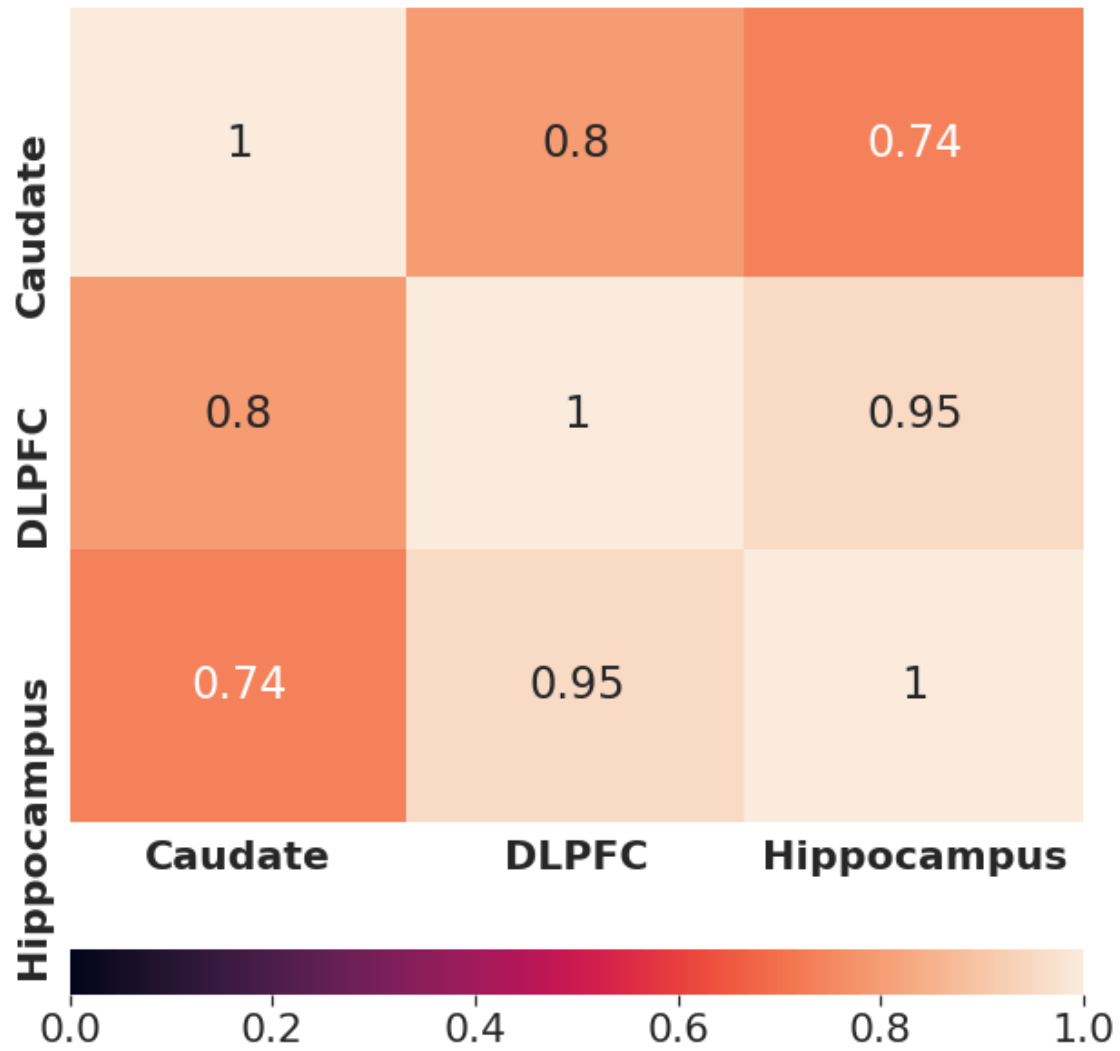
1.2.3 Exons

```
[15]: mat = r(''load("../_m/exons/mashr_meta_results.RData"); mashr::  
  ↳get_pairwise_sharing(m2)''')  
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],  
                  columns=["Caudate", "DLPFC", "Hippocampus"])  
df
```

```
[15]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.798320	0.735537
DLPFC	0.798320	1.000000	0.954312
Hippocampus	0.735537	0.954312	1.000000

```
[16]: sns.set(font_scale=2)  
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}  
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))  
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,  
                    annot=True, cbar_ax=cbar_ax,  
                    cbar_kws={"orientation": "horizontal"})  
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")  
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")  
sns_plot = chart.get_figure()  
sns_plot.savefig("eQTL_sharing_heatmap_exon.pdf")  
sns_plot.savefig("eQTL_sharing_heatmap_exon.png")
```



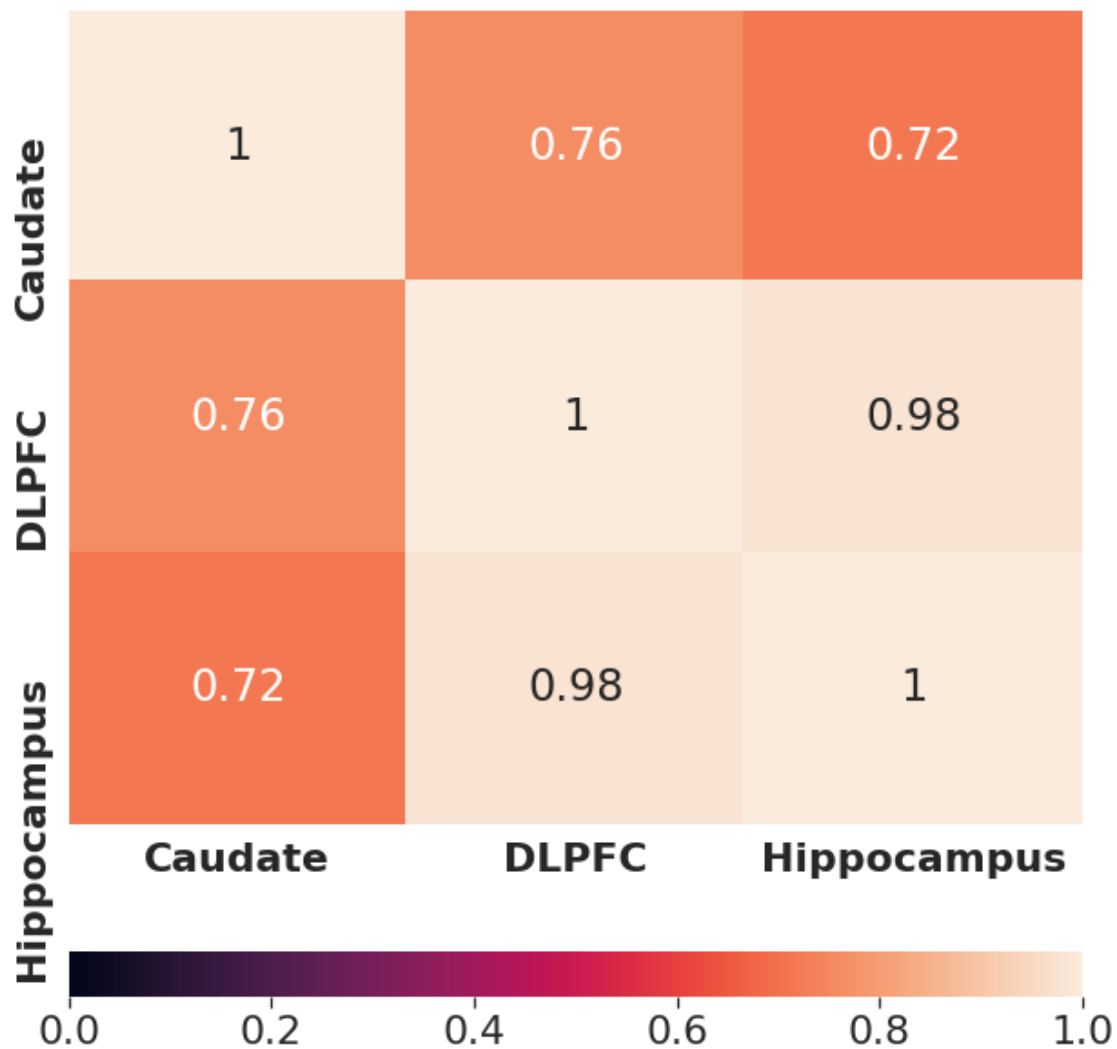
1.2.4 Junctions

```
[17]: mat = r('load("../_m/junctions/mashr_meta_results.RData"); mashr::
      ↪get_pairwise_sharing(m2)')
df = pd.DataFrame(np.array(mat), index=["Caudate", "DLPFC", "Hippocampus"],
                  columns=["Caudate", "DLPFC", "Hippocampus"])
df
```

```
[17]:
```

	Caudate	DLPFC	Hippocampus
Caudate	1.000000	0.763247	0.716425
DLPFC	0.763247	1.000000	0.976754
Hippocampus	0.716425	0.976754	1.000000

```
[18]: sns.set(font_scale=2)
grid_kws = {"height_ratios": (.9, .05), "hspace": .3}
f, (ax, cbar_ax) = plt.subplots(2, gridspec_kw=grid_kws, figsize=(10,10))
chart = sns.heatmap(df, ax=ax, vmin=0, vmax=1,
                    annot=True, cbar_ax=cbar_ax,
                    cbar_kws={"orientation": "horizontal"})
chart.set_yticklabels(chart.get_yticklabels(), fontweight="bold")
chart.set_xticklabels(chart.get_xticklabels(), fontweight="bold")
sns_plot = chart.get_figure()
sns_plot.savefig("eQTL_sharing_heatmap_jxn.pdf")
sns_plot.savefig("eQTL_sharing_heatmap_jxn.png")
```



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[ ]:
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