

```
In[*]:= SetDirectory["C:\\drorbn\\AcademicPensieve\\Talks\\Tokyo-230911"]
```

```
Out[*]=
```

```
C:\drorbn\AcademicPensieve\Talks\Tokyo-230911
```

```
(*n=7;w=1;
SeedRandom[0];
pts={};
While[Length[pts]<24n/3,pts=pts∪{pt@@RandomInteger[2n-1,2]}];
Echo[2n+w n+w]
gb=Rasterize[ImageCrop@ArrayPlot[
  SparseArray[
    Join[
      pts/.pt[x_,y_]:>{x+w n+w+1,y+w n+w+1}>1,
      side=Flatten[Table[ds=IntegerDigits[k,2,n];
        Table[{1+w (j-1)+i,k+w n+w+1}>1/4 (1+3 ds[[j])},{i,0,w-1},{j,n}],{k,0,2n-1}]],
      side/.{x_,y_}>{y,x}],
    {2n+w n+w,2n+w n+w}
  ],
  Frame -> False],RasterSize->2n+w n+w]
Export["GameBoard-"<>ToString[n]<>".png",gb]*)
```

```
In[*]:= n = 7;
```

```
SeedRandom[0];
```

```
pts = {};
```

```
While[Length[pts] < 24n/3, pts = pts ∪ {pt @@ RandomInteger[2n - 1, 2]}];
```

```
gb = Rasterize[ImageCrop@ArrayPlot[
```

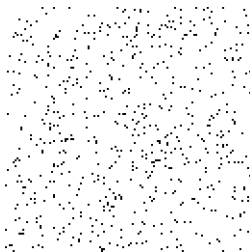
```
  SparseArray[
```

```
    pts /. pt[x_, y_] := {x + 1, y + 1} -> 1,
    {2n, 2n}
  ],
```

```
  Frame -> False], RasterSize -> 2n]
```

```
Export["GameBoard-" <> ToString[n] <> ".png", gb]
```

```
Out[*]=
```



```
Out[*]=
```

```
GameBoard-7.png
```

```
In[*]:= n = 7;
ruler = Image[Table[IntegerDigits[k, 2, n], {k, 0, 2^n - 1}]^T]
Export["Ruler-" <> ToString[n] <> ".gif", ruler]
```

Out[\*]=

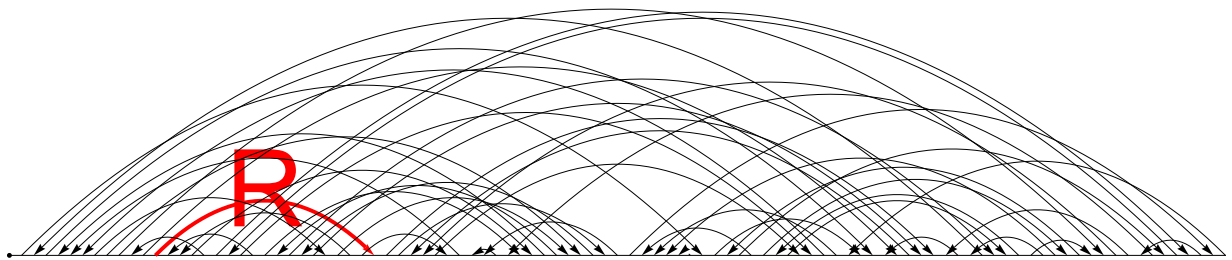


Out[\*]=

Ruler-7.gif

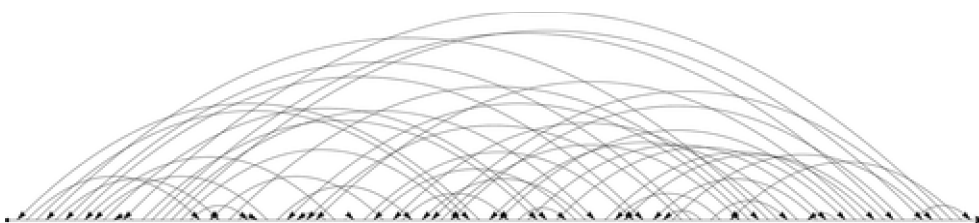
```
In[*]:= RandomGaussDiagram[n_, as___] := Module[{i, j, a, is},
  is = Range[n];
  Graphics[{
    Arrowheads[0.015],
    Disk[{0, 0}, 0.2],
    Arrow@Line[{{0, 0}, {n + 2, 0}}],
    Arrowheads[0.01],
    Flatten@Table[
      {i, j} = List@@a[[{2, 3}]];
      is = Complement[is, {i, j}];
      {
        a[[1]],
        Arrow@BezierCurve[{{i, 0}, { $\frac{i+j}{2}$ , Abs[ $\frac{i-j}{2}$ ]}, {j, 0}}],
        Text[Style[a[[4], 56], { $\frac{i+j}{2}$ , Abs[ $\frac{i-j}{3.3}$ ]}]]
      },
      {a, {as}}
    ],
    Black,
    Table[
      {i, j} = a;
      Arrow@BezierCurve[{{i, 0}, { $\frac{i+j}{2}$ , Abs[ $\frac{i-j}{2}$ ]}, {j, 0}}],
      {a, Partition[is[[PermutationList@RandomPermutation@Length@is], 2]}
    ]
  }];
RandomGaussDiagram[100, {{Thick, Red}, 12, 30, "R"]]
```

Out[ ]=



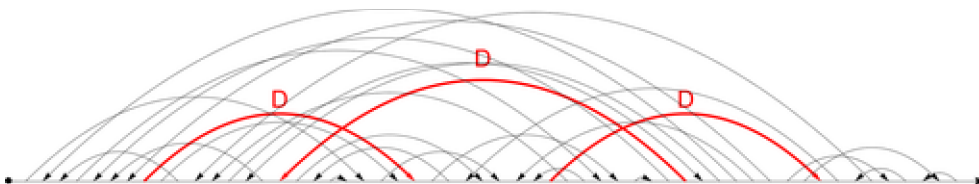
```
In[ ]:= MakeImage["GDExample", SeedRandom[0];
  RandomGaussDiagram[100]
]
```

Out[ ]=



```
In[ ]:= MakeImage["GD1", SeedRandom[0];
  RandomGaussDiagram[56, {{Thickness[0.0025], Red}, 8, 24, "D"},
    {{Thickness[0.0025], Red}, 40, 16, "D"}, {{Thickness[0.0025], Red}, 32, 48, "D"}]
]
```

Out[ ]=



```
In[ ]:= MakeImage["GD2", SeedRandom[0]; w = 8;  
  RandomGaussDiagram[9 w,  
    {{Thickness[0.0025], Purple}, 1 w, 6 w, "P"},  
    {{Thickness[0.0025], Purple}, 8 w, 3 w, "P"},  
    {{Thickness[0.0025], Blue}, 4 w, 2 w, "L"}, {{Thickness[0.0025], Blue}, 5 w, 7 w, "L"}  
  ]  
]
```

Out[ ]=

