**D3**

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| **Name** | **Link** | **Description** |
| Edge bundling | [降低图可视化视觉混乱——Edge Bundling（边绑定） - 知乎 (zhihu.com)](https://zhuanlan.zhihu.com/p/94155959)  [upphiminn/d3.ForceBundle: Force Directed Edge Bundling (FDEB) in Javascript; d3.js ready. (https://www.win.tue.nl/vis1/home/dholten/papers/forcebundles\_eurovis.pdf) (github.com)](https://github.com/upphiminn/d3.ForceBundle)  <(https://www.win.tue.nl/vis1/home/dholten/papers/forcebundles_eurovis.pdf) (github.com)> | 降低force directed graph的视觉复杂度（把边聚类成簇），可以参考 |
| Group nodes | [d3.js: force layout; click to group/bundle nodes / rymarchikbot | Observable (observablehq.com)](https://observablehq.com/@rymarchikbot/d3-js-force-layout-click-to-group-bundle-nodes) | 把一类node聚在一起 |
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| Hierarchical edge bundling | [Hierarchical edge bundling – from Data to Viz (data-to-viz.com)](https://www.data-to-viz.com/graph/edge_bundling.html)  [Hierarchical Edge Bundling / D3 | Observable (observablehq.com)](https://observablehq.com/@d3/hierarchical-edge-bundling) | 分层，不同bundle的依赖关系聚成簇 |
| Temporary Force-directed graph | [Temporal Force-Directed Graph / D3 | Observable (observablehq.com)](https://observablehq.com/@d3/temporal-force-directed-graph) | 按时间变化的force directed graph |
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[图机器学习(一)--图数据挖掘传统方法 - 知乎 (zhihu.com)](https://zhuanlan.zhihu.com/p/549155570)

[图机器学习(二)--图神经网络 - 知乎 (zhihu.com)](https://zhuanlan.zhihu.com/p/550678815)

[图机器学习(三)--图嵌入 - 知乎 (zhihu.com)](https://zhuanlan.zhihu.com/p/550167424)

[10708 Probabilistic Graphical Models (cmu.edu)](http://www.cs.cmu.edu/~epxing/Class/10708-14/lecture.html)

[图表征学习（graph representation learning） - 知乎 (zhihu.com)](https://zhuanlan.zhihu.com/p/264838844)

图嵌入表征：

[shenweichen/GraphEmbedding: Implementation and experiments of graph embedding algorithms. (github.com)](https://github.com/shenweichen/GraphEmbedding)

图链接预测：

[GKNL/SMiLE: 『EMNLP 2022 Findings』SMiLE: Schema-augmented Multi-level Contrastive Learning for Knowledge Graph Link Prediction (github.com)](https://github.com/GKNL/SMiLE)