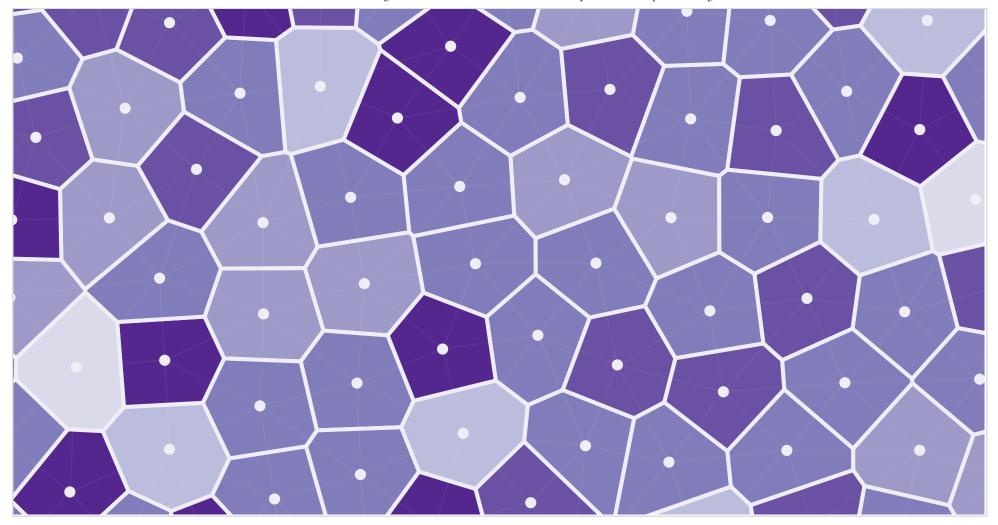Christopher Manning

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# Voronoi Diagram with Force Directed Nodes and Delaunay Links
## February 6, 2012

view source at gist.github.com

Voronoi Diagrams are really interesting from an aesthetic, mathematical, and application perspective. I created this to experiment with connecting multiple d3.js layouts.

Nodes are linked to nodes in neighboring cells. The cell's color is a function of its area.

The white lines are the Delaunay triangulation and the purple cells are the Voronoi diagram.

# Controls

- Drag the cells to interact with the diagram.

- Use the mousewheel to add/remove nodes.
- Hold shift while using the mousewheel to change the initialization spiral
- Press the letter s to toggle the simulation

# References

- [Voronoi_diagram](#)
- [Delaunay_triangulation](#)
- [D3.js Force Layout](#)
- [Colorbrewer](#)

# Changelog

- **Current Version**
  - Added color transition on cells
  - Added drag handle to cells
  - Uses simpler d3.gemo.voronoi() api
  - Scales to smaller viewports
  - Nodes are added along a spiral
  - Added keyboard controls
- [December 2012 v3](#) ([gist](#))
  - Made cells fill the entire viewport
- [Februrary 2012 v2](#) ([gist](#))
  - Changed node and link styles.
- [Februrary 2012 v1](#) ([gist](#))
  - I noticed [a pull request for d3.js that suggested making Voronoi diagrams more extensible](#) which would help to speed up the rendering of this visualization.

# Nice Things People Have Said

Force-directed Voronoi/Delaunay. Use mousewheel to add/remove nodes. Wow! [http://t.co/QYAtKKTQ](http://t.co/QYAtKKTQ) by [@cmanning88](#)

— Mike Bostock (@mbostock) [February 11, 2012](#)

Cool "living" mathematical object. Mess with it at [http://t.co/xUOPjEpI](http://t.co/xUOPjEpI) btw [@ANDREYEVSKY](#) - my first tweet!

— Jeremy Strayer (@jeremystrayer) [August 15, 2012](#)

Interactive Voronoi diagram. Nice visualization. [http://t.co/UpkPiYvG](http://t.co/UpkPiYvG)

— Mitchell Cichocki (@mitcki) [November 27, 2012](#)

Force-Directed Voronoi http://t.co/NuK6vm6X wow! Simply awesome!

— Jonathan Acuña (@jonacuso) January 29, 2013

Cool, reminded me of k-d trees from way back and induced Voronoi partitioning. http://t.co/OIDGZpTPhb

— Jorge Phillips (@jorgephillips) June 18, 2013

voronoi caleidoscope with d3js, it feels and looks alive http://t.co/3uEui1w9gC

— tzvetanka (@tzvetanka) August 29, 2013

Force-directed Voronoi diagram: use your mouse wheel to add or remove the regions http://t.co/GdnmrNr3Yh Just incredible

— Alexander Bogomolny (@CutTheKnotMath) June 18, 2013

This is a good way to get a feel for how Chaste's triangulation-based off-lattice cell models work: http://t.co/Vn0Pk0td9s #OxCompBio

— Gary Mirams (@GaryMirams) August 19, 2013

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**Kenny Bastani** · 2 years ago

Insanely cool man. This absolutely rocks. Good work.

7 ▲ | ▾ · Reply · Share ›

**Alexander Vyssokii** · a year ago

Amazingly handy visualization tool to play with! Just great!

▲ | ▾ · Reply · Share ›

**berloma** · 2 years ago

Mesmerizing!

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