CPSC 683: Information Visualization

Assignment for Sept. 17th

While CPSC 683 is an introduction to information visualization, the format is designed to provide considerable depth in understanding, as well as considerable practice in the discipline. Students will read the main research contributions from current research papers. The format will be seminar, discussion and in class exercises. Students will present and discuss these topics themselves. Also, students will do a major research project that explores a particular methodological approach to the creation of information visualizations.

For fall 2012 this methodological approach we will explore will be biomimicry. Biomimicry is a design process in which biology is used as a source of inspiration for the spatialization of data, and/or the functional and interactive components that support data exploration. This does not mean the projects will be limited to bio-visualization. However, either or both of the visual representation and the interaction with the representation will make use of knowledge, ideas, forms, processes from biology to inform the design process.

To start this project you need to bring to class on Sept. 17th four separate items.

**Items 1 to 3:** These will be images of three sources of bio-inspiration. These can be your own images (from photos you have taken) or images that you have found. See the bottom of this page for possible sources for images that might appeal to you.

**Item 4:** Bring a small representative example of data that you might wish to work with.

**BioLinks (thanks to Marjan Eggermont)**

http://www.asknature.org/

- search terms (e.g. ‘create pattern’, ‘information’)
- browse (allows for functional search terms)

http://en.wikipedia.org/wiki/Patterns_in_nature

Kunstformen der Natur (German for Art Forms of Nature) is a book of lithographic and autotype prints by German biologist Ernst Haeckel:


http://caliban.mpiz-koeln.mpg.de/haeckel/kunstformen/liste.html

http://algorithmic-worlds.net/Haeckel/haeckel.php

Sir D'Arcy Wentworth Thompson (2 May 1860, Edinburgh – 21 June 1948, St Andrews) was a Scottish biologist, mathematician, and classics scholar. A pioneering mathematical biologist, he
is mainly remembered as the author of the 1917 book On Growth and Form, written largely in Dundee in 1915. The central theme of On Growth and Form is that biologists of its author's day overemphasized evolution as the fundamental determinant of the form and structure of living organisms, and underemphasized the roles of physical laws and mechanics. He advocated structuralism as an alternative to survival of the fittest in governing the form of species:

http://archive.org/details/ongrowthform1917thom

http://en.wikipedia.org/wiki/Fungus