CS/ENGRI 172, Fall 2003: Computation, Information, and Intelligence 9/29/03: Nearest-Neighbor Learning

Revised Office Hours Schedule

The following is the current office hours schedule. As always, you are also welcome to make an appointment to meet with any of the course staff.

Monday	2:30 - 3:30	William Lin	328B Upson Hall
Tuesday	10:00 - 11:00	Amy Gale	423 Rhodes Hall
	2:00 - 3:00	Amanda Holland-Minkley	403 Rhodes Hall
Wednesday	1:30 - 2:30	Amanda Holland-Minkley	403 Rhodes Hall
Thursday	11:00 - 12:00	Amy Gale	423 Rhodes Hall
	1:30 - 2:30	Shannon McGrath	328B Upson Hall

Nearest-Neighbor Learning Algorithm

Assume that there is some function value distinguished as the *default*, and that we have established a convention for resolving ties. As before, $\vec{x}^{(i)}$ denotes the i^{th} oracle example.

Output *default* as the guess of $\vec{x}^{(1)}$'s label

For each subsequent example $\vec{x}^{(i)}$

Find the stored instance $\vec{x}^{(j)}$, j < i, that minimizes $dist(\vec{x}^{(j)}, \vec{x}^{(i)})$

Output the stored (oracle's previously-given) label for $\vec{x}^{(j)}$

Store $\vec{x}^{(i)}$ and $\vec{x}^{(i)}$'s correct label

Voronoi Partitions

A Voronoi Partition divides space up into a finite collection of Voronoi cells, each defined by a single distinguishing point within it, such that all points within a cell are closer to that cell's distinguishing point than any of the other distinguishing points in the space.

