SAN DIEGO STATE UNIVERSITY
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SDSU
presents
a thesis defense for
Master of Science
degree in
Computer Science

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1:30 pm
GMCS 418

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Drawing Voronoi, Convex Hull and
Minimum Bounding Rectangle for Given Set of Points

Abstract

GIS tool for plotting Minimum Bounding Rectangle (MBR), Convex Hull and Voronoi Diagram for given set of input points. To avoid conflict between different working entities in a particular region there needs to exist boundaries.

For example, every household in a city is associated to a particular post office. If a house belongs to another region, it would be wasteful for a postman to go out of his way to make a delivery.

This is called the post office problem whose solution requires us to partition space in some way. The resulting partition of space is called a Voronoi diagram.

This thesis involves,

Input:

To plot MBR, for set of US states.
To plot Convex Hull, set of capitals from US states.
To draw Voronoi Diagram, for set of capitals from US states.

Output:

Plotting a Minimum Bounding Rectangle (MBR) for a given point, if user selects MBR in tool bar.
Plotting convex hull for a given points, if user select convex hull option in tool bar.
Drawing Voronoi diagram for given points, if user selects Voronoi option in tool bar.

Thesis Committee

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