

Geoinformatica paper extension

University of California, Riverside

February 1, 2024

So far...

- ▶ Removing invalid and overlapping polygons. Fixing precision error.
- ▶ Done with code and pipeline compatibility.
- ▶ Tested new implementation of k-d tree.

So far...

- ▶ Found a quite interesting paper and implementation of balanced k-d tree:
 - ▶ *Russell A. Brown, Building a Balanced k-d Tree in $O(kn \log n)$ Time, Journal of Computer Graphics Techniques (JCGT), vol. 4, no. 1, 50-68, 2015 Available online*
<http://jcgt.org/published/0004/01/03/>
- ▶ However during integration it arises two important issues:
 - ▶ Some how I have to generate contiguous regions that represent the bounds of the leaves in the tree...
 - ▶ **During partitioning just a sample of the data is used. At that point we do not know if a partition could be unbalanced...**

What's next...

- ▶ Explore how to take advantage of interval finding at partition level...
- ▶ Work on cell boundaries from points in leaves...