

PFLOCK Report

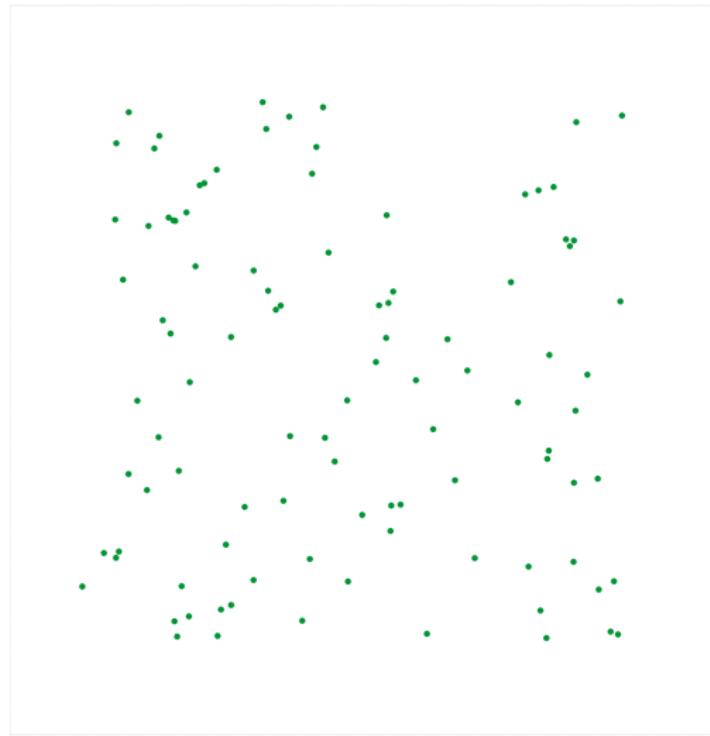
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University of California, Riverside

August 18, 2023

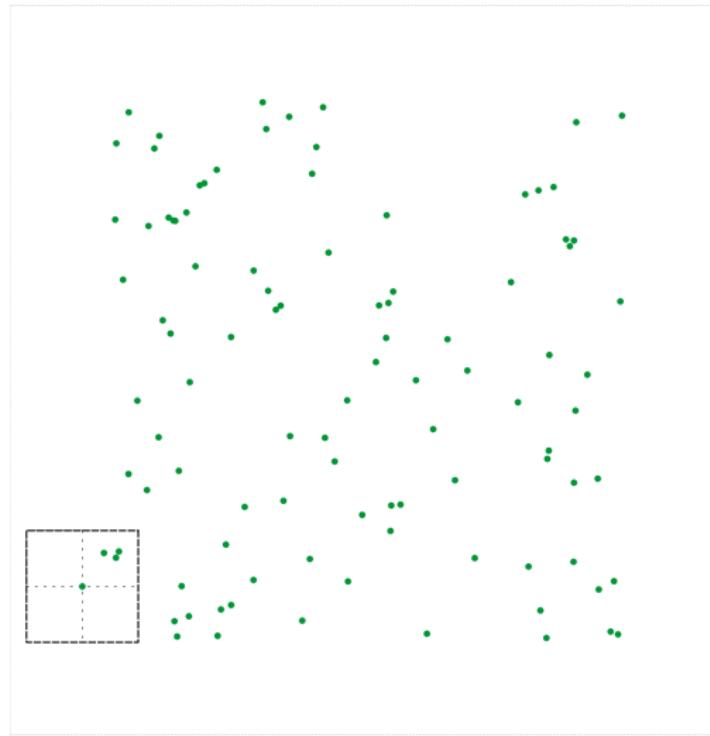
PSI stages...

Small dense dataset (100 points, $\varepsilon=1$, $\mu=3$)



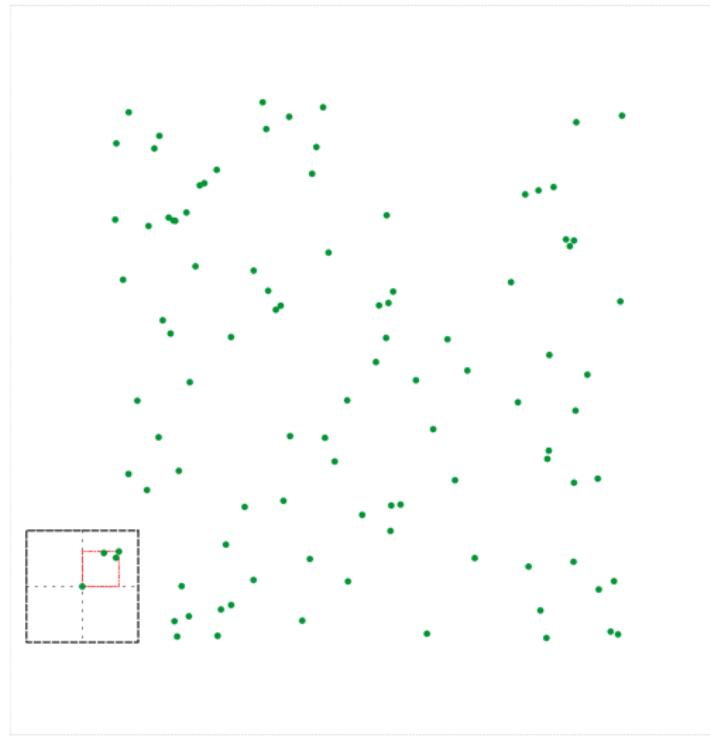
PSI stages...

Sweep plane across x-axis...



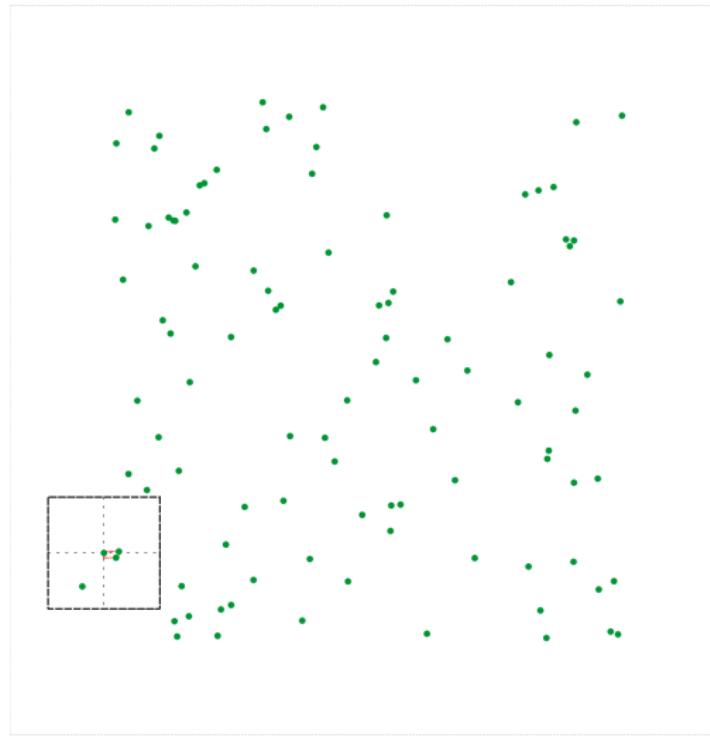
PSI stages...

Sweep plane across x-axis...



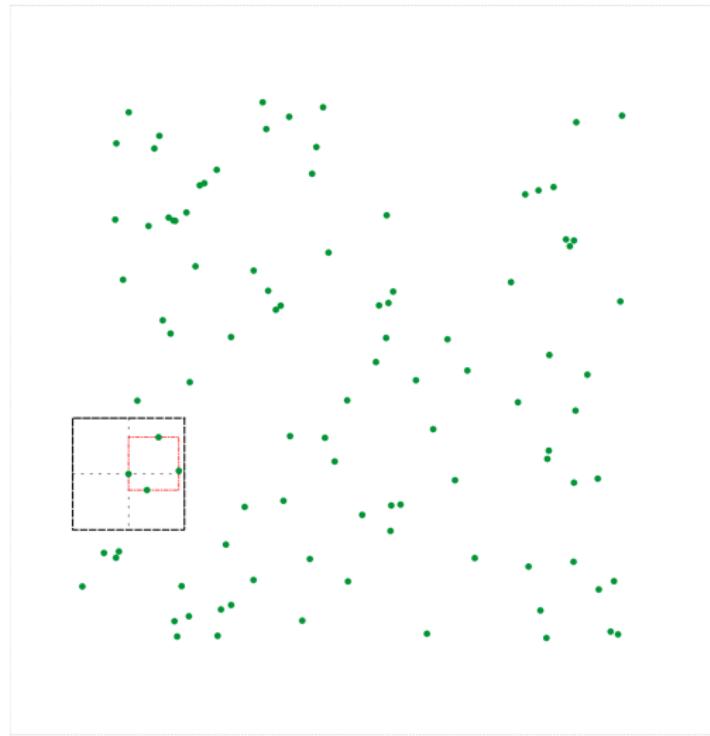
PSI stages...

Sweep plane across x-axis...



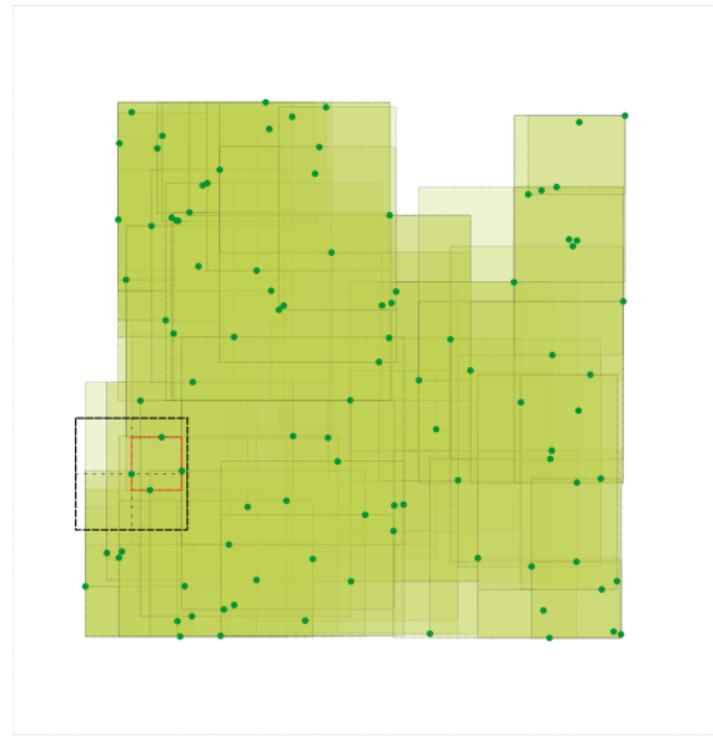
PSI stages...

Sweep plane across x-axis...



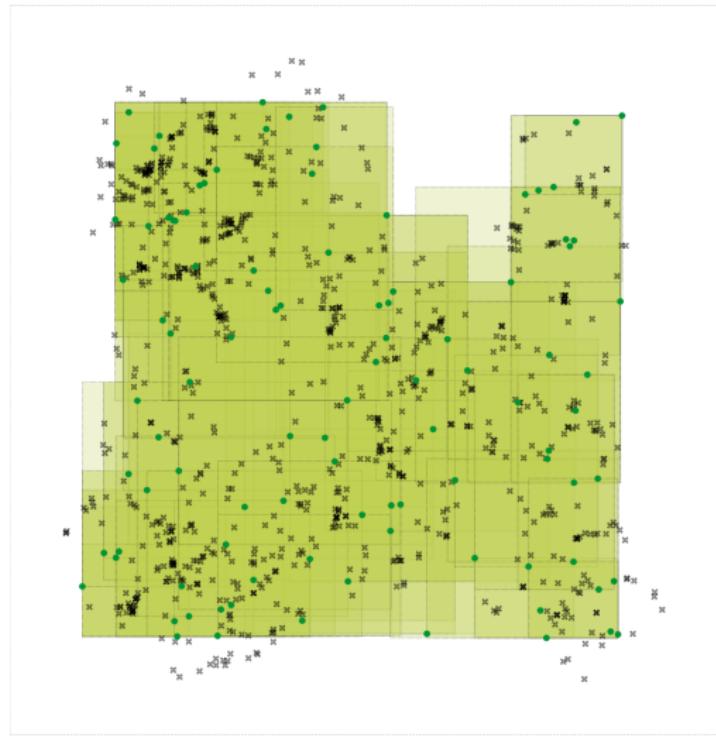
PSI stages...

Active boxes (88)...



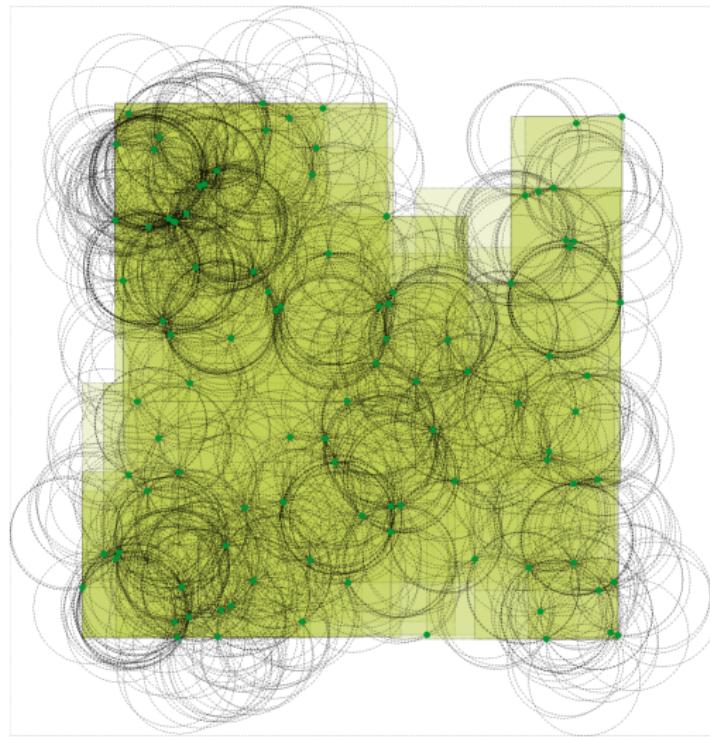
PSI stages...

Finding centres (1020)...



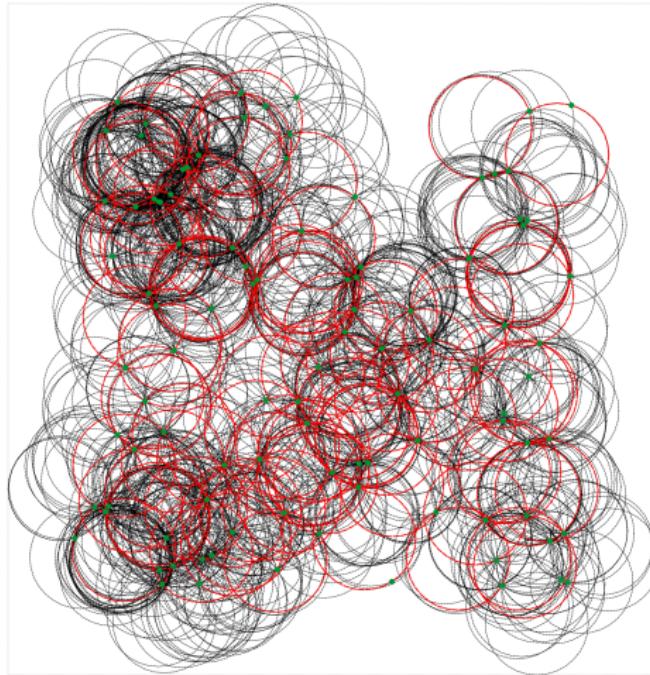
PSI stages...

Finding candidates (959)...



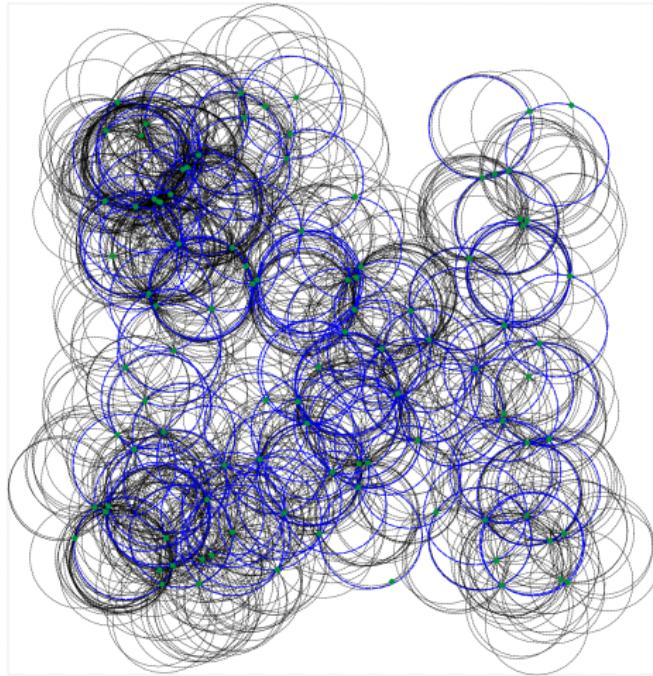
PSI stages...

Running filterCandidates algorithm. Maximals disks in PSI (98)...

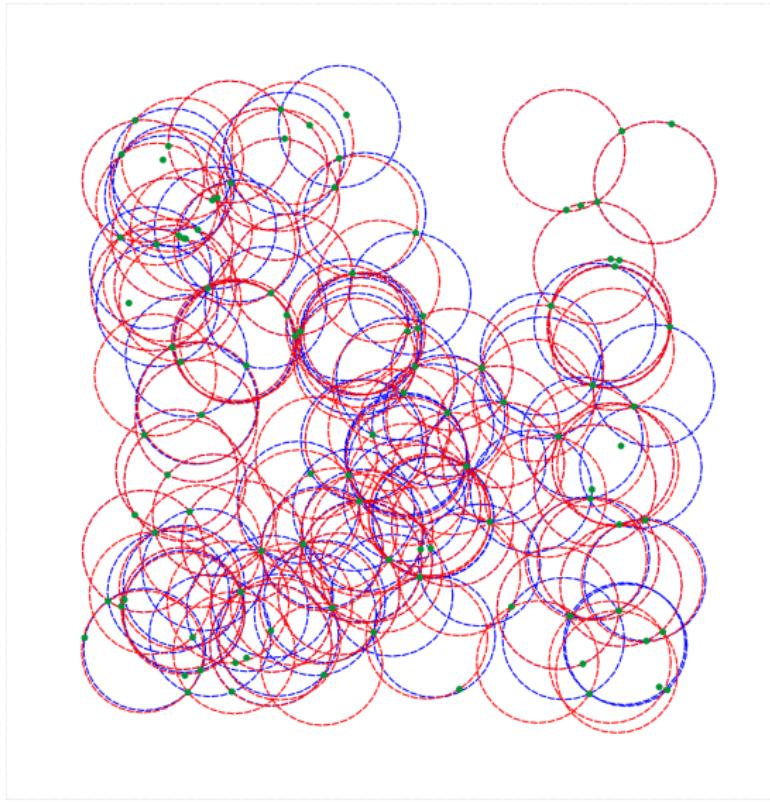


PSI results...

Maximal disks in BFE (98)...



PSI and BFE...



What's next?

- ▶ Run performance experiments using BFE and PSI for dense datasets en parallel...
- ▶ Router, Resampler and Reprojector (RRR) are ready for ny_taxis and ny_bikes.
- ▶ Run RRR in new dataset sf_taxis (San Francisco taxis)...
- ▶ Start working on temporal dimension...
 - ▶ Explore 3D partitioners...

Alternative trajectory datasets...

ny_bikes [Citi Bike NY]



Trajectories: 2'734.157 Time span: March 2023

Alternative trajectory datasets...

ny_taxis [TLC Trip Record Data]



Trajectories: 14'336.486 Time span: October 2013