BlueConduit IACS

Locating lead pipes in Flint, Michigan

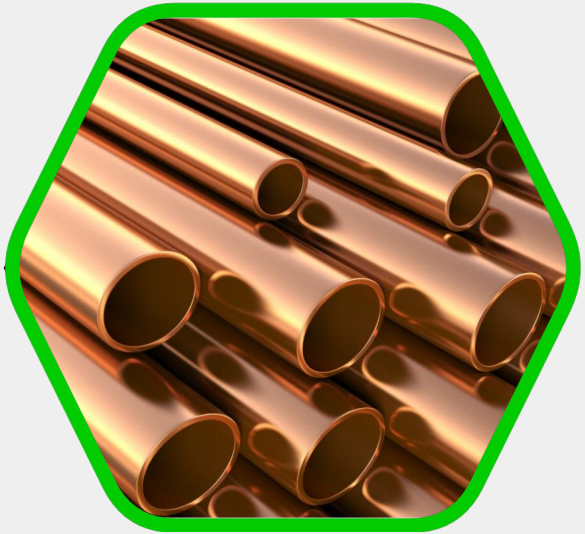
2014

Flint changes water source from Detroit to the Flint River

2015

New water corrodes lead pipes

Lead gets into water → Lead **poisoning**



COPPER

✓

LEAD

✗

PROBLEM

No city record of pipes, and digging up pipes is **expensive**

BLUECONDUIT'S MODEL

Uses city data to predict copper/lead.

- Model has 81% hit rate
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Uses no spatial predictors (e.g. long/latitude)

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METHOD

1

NAIVE

Insert long/latitude as predictors.

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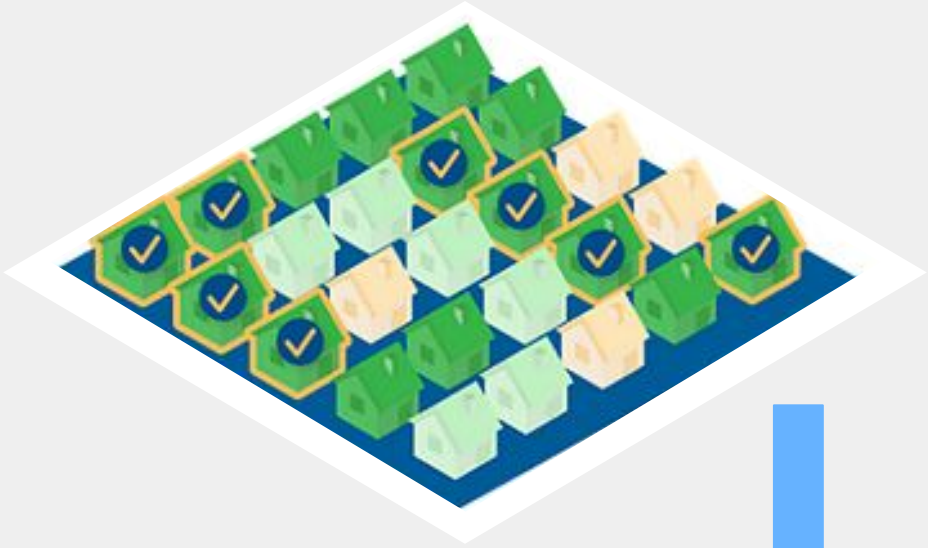
SIMPLE

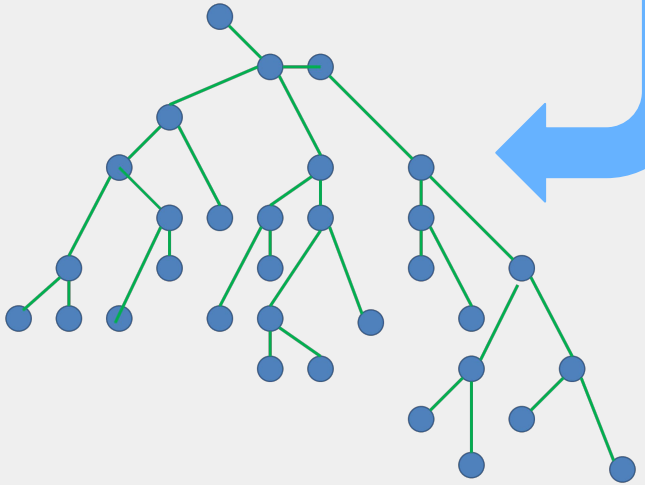
Group by regions, k-NN, autocorrelation, etc.

3

DIFFUSION

Encode homes with graph nodes, then model info sharing based on proximity.





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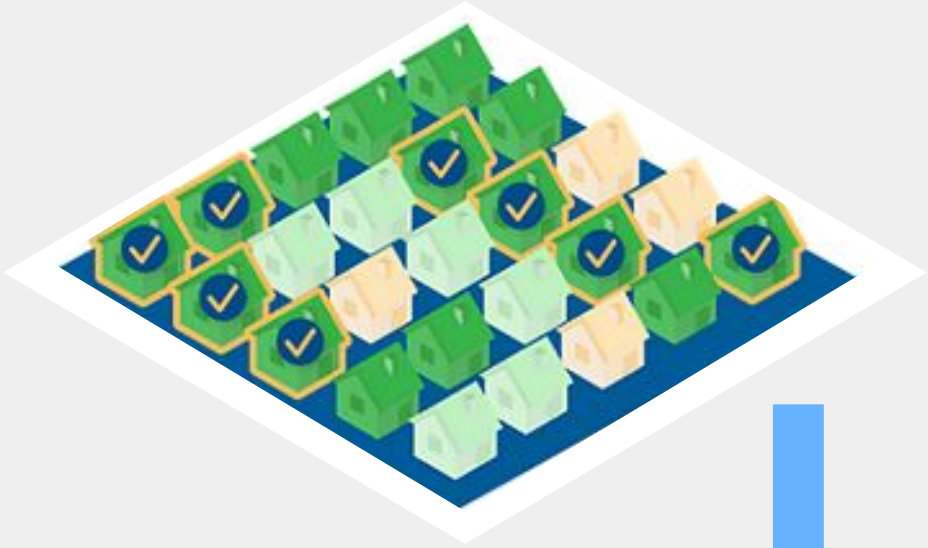

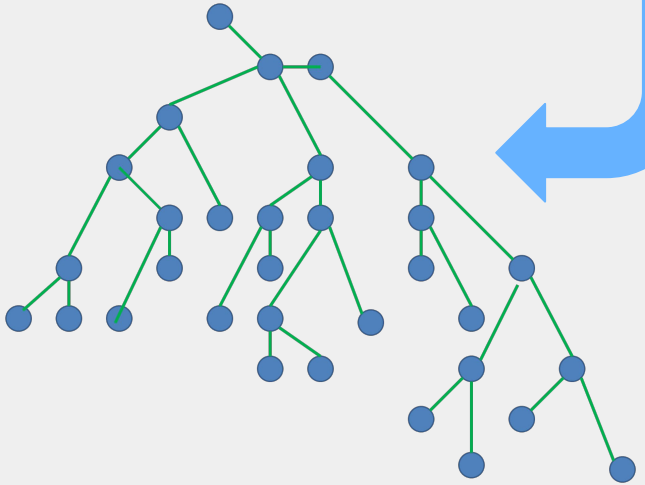

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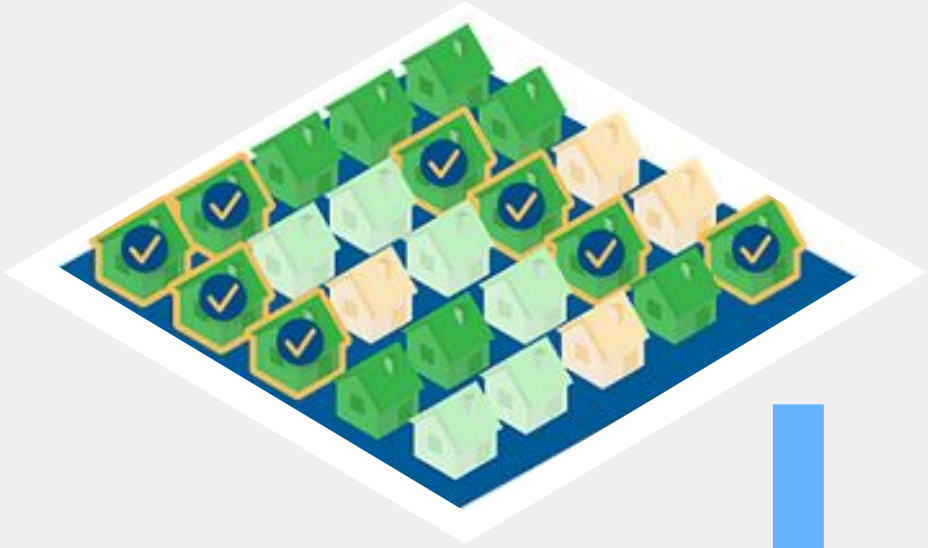
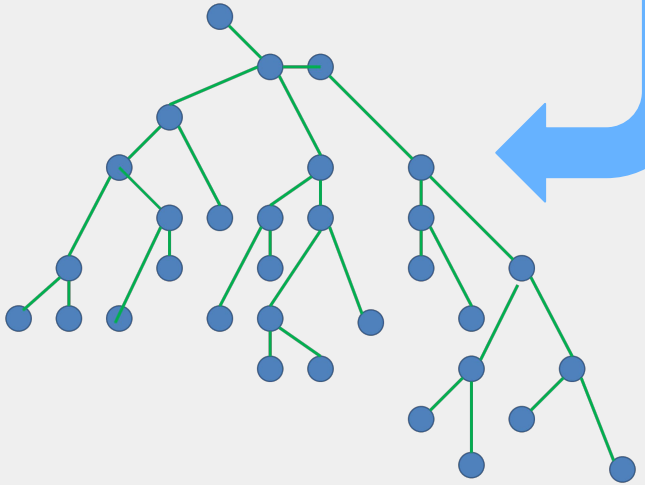
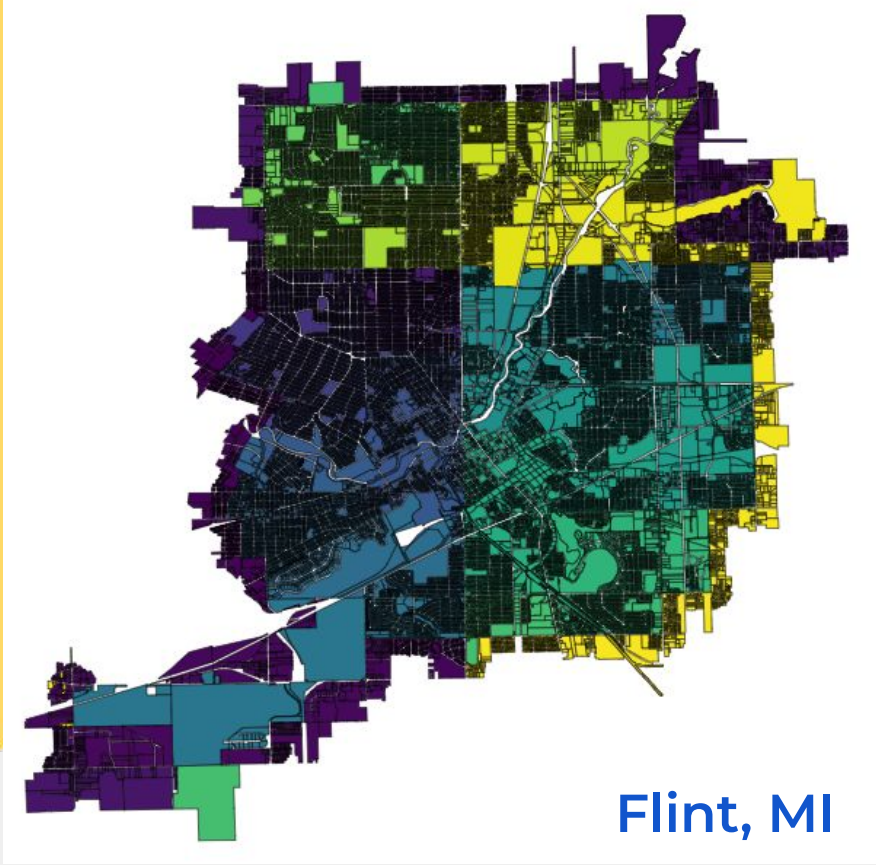




WHAT IS SUCCESS?

- Spatial info improves current model's "hit rate".
- *[Stretch]* Spatial info improves model with small sample sizes.



What's At Stake?

Save lives in Flint

Save $$$ in Flint

Save lives and $$$ elsewhere

Thank you!

Kevin, Javiera, Max, Dash