


TypoTweet Maps: Characterizing Urban Areas through Typographic Social Media Visualization

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EuroVis



Topics of conversation
highlight differences and
shared interests between
neighborhoods

Individual neighborhoods
can have very different
characteristics from one
another

A person is holding a smartphone in their hands. The phone screen displays a page for 'OFF FESTIVAL KANGAROO' with a logo and some text. The person is wearing a brown watch on their left wrist and a black watch on their right wrist. The background is a blurred outdoor setting.

Geotagged tweets can be a rich data source for determining what people are saying about a location

Relating the text data to spatial location presents a unique challenge in representation and layout

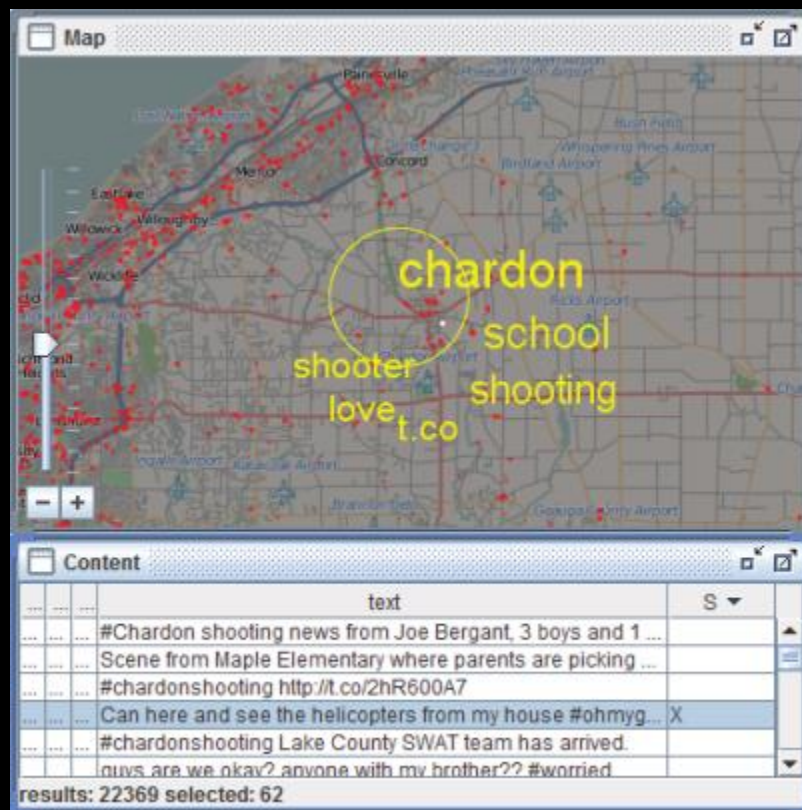
Joseph, K., Tan, C. H., & Carley, K. M. (2012, September). Beyond local, categories and friends: clustering foursquare users with latent topics. In *Proceedings of the 2012 ACM conference on ubiquitous computing* (pp. 919-926). ACM.

Topic Variation at a Point



Stefanidis, A., Crooks, A., & Radzikowski, J. (2013). Harvesting ambient geospatial information from social media feeds. *GeoJournal*, 78(2), 319-338.

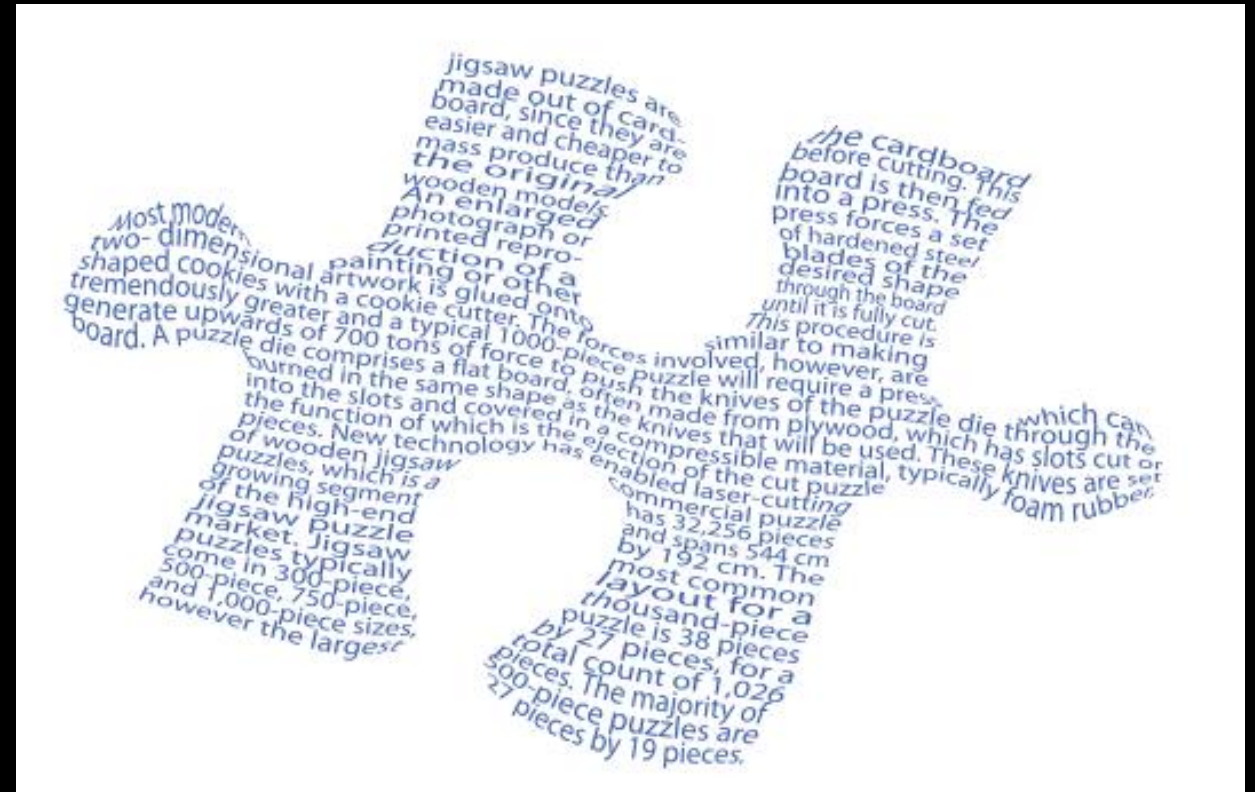
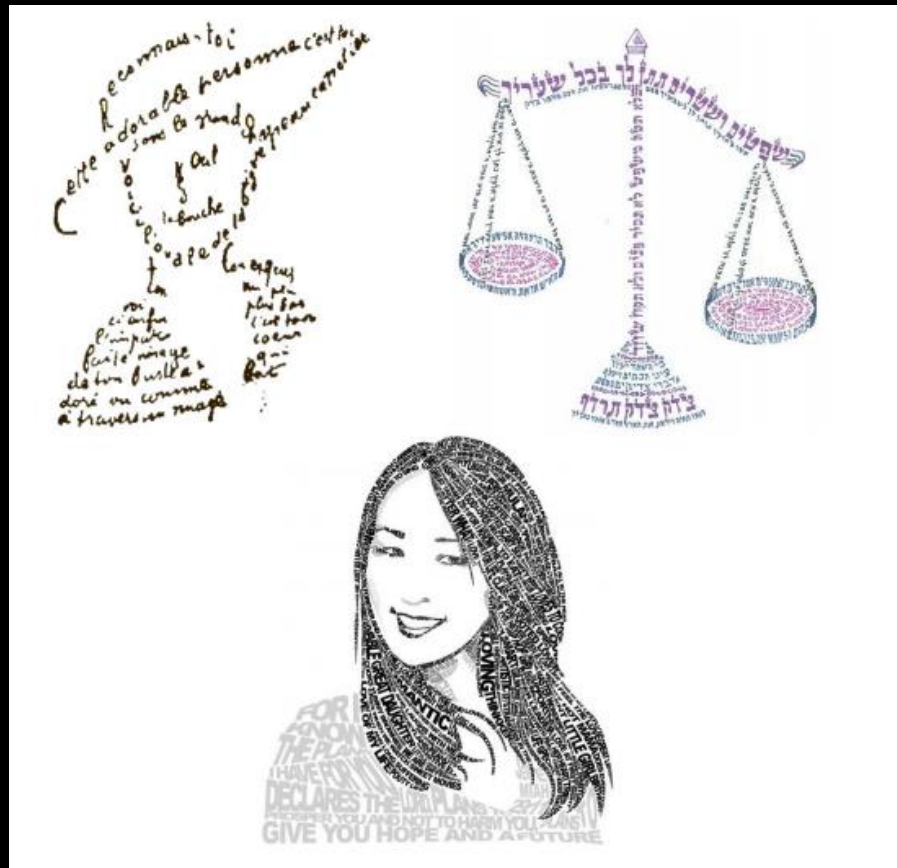
Text Content Lens

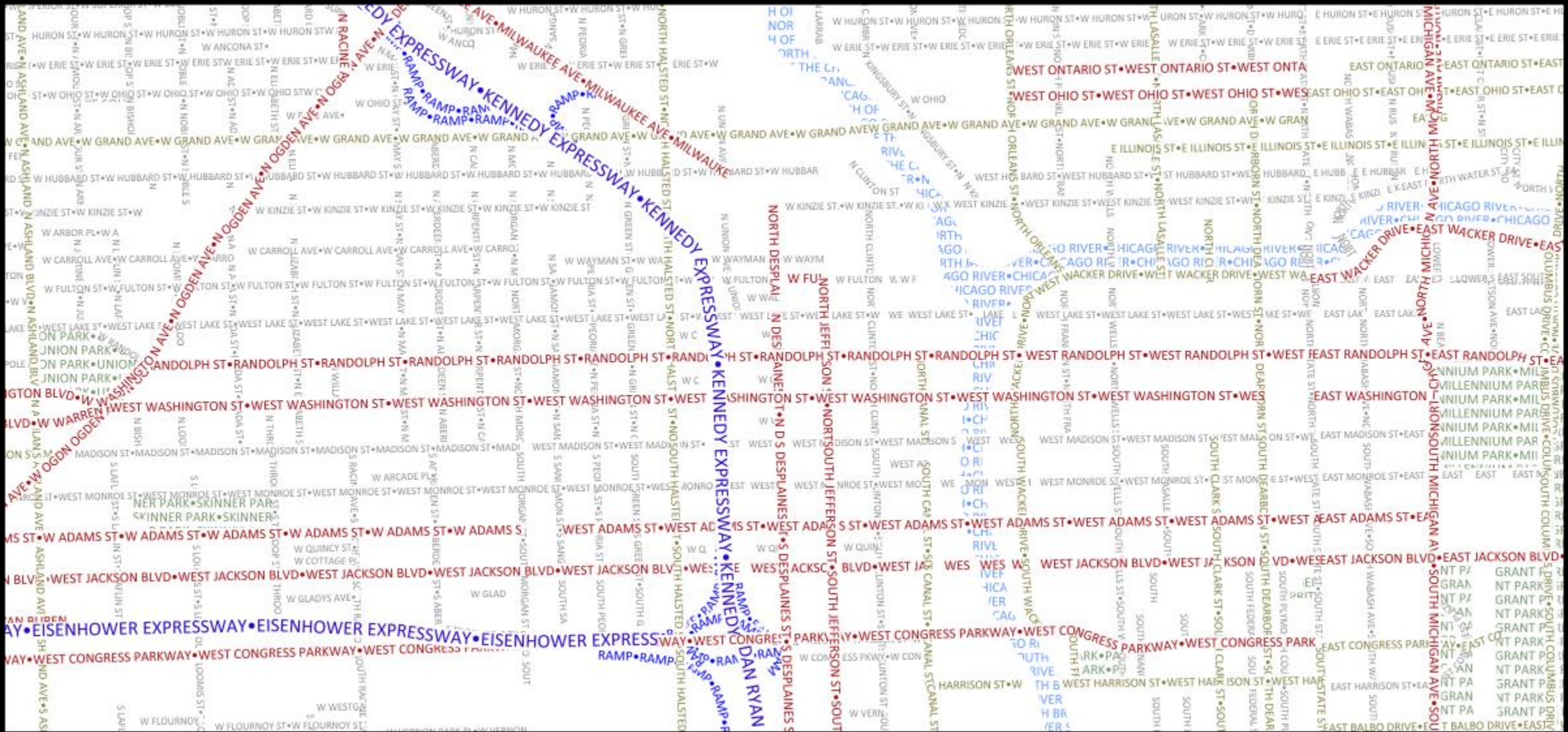


Chae, J., Thom, D., Bosch, H., Jang, Y., Maciejewski, R., Ebert, D. S., & Ertl, T. (2012, October). Spatiotemporal social media analytics for abnormal event detection and examination using seasonal-trend decomposition. In *Visual Analytics Science and Technology (VAST)*, 2012

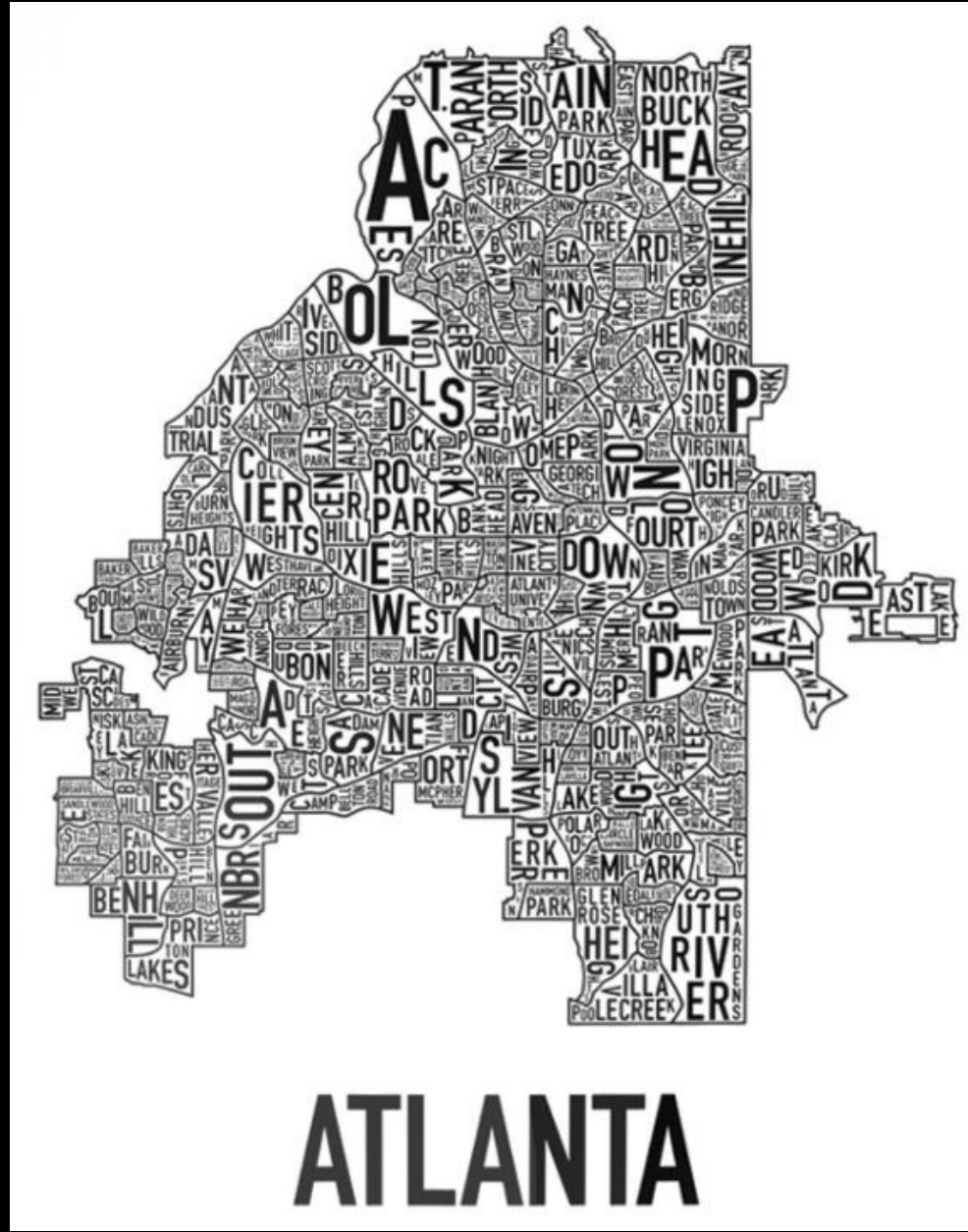


Micrography



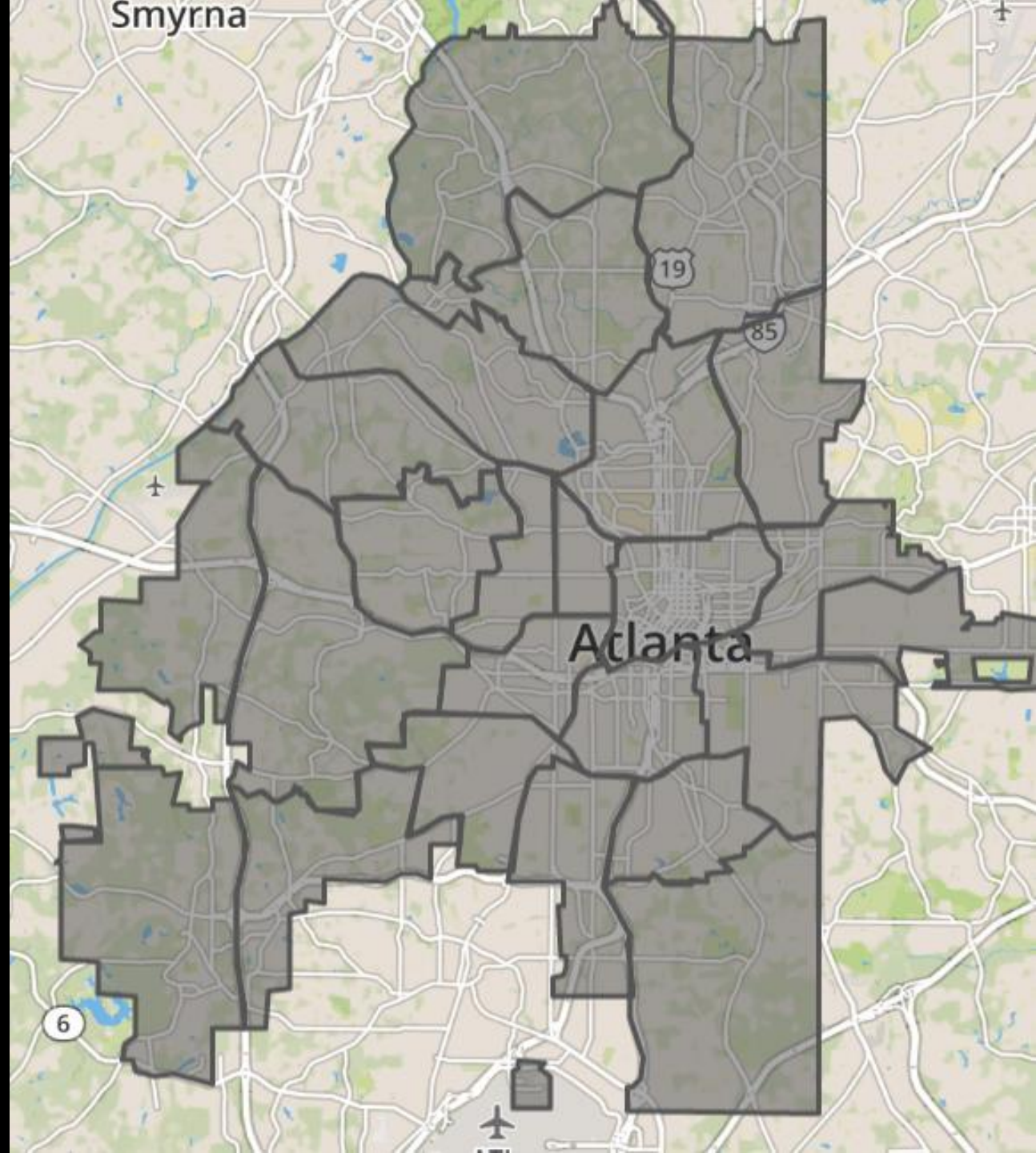


Afzal, S., Maciejewski, R., Jang, Y., Elmqvist, N., & Ebert, D. S. (2012). Spatial text visualization using automatic typographic maps. IEEE Transactions on Visualization and Computer Graphics, 18(12), 2556-2564.



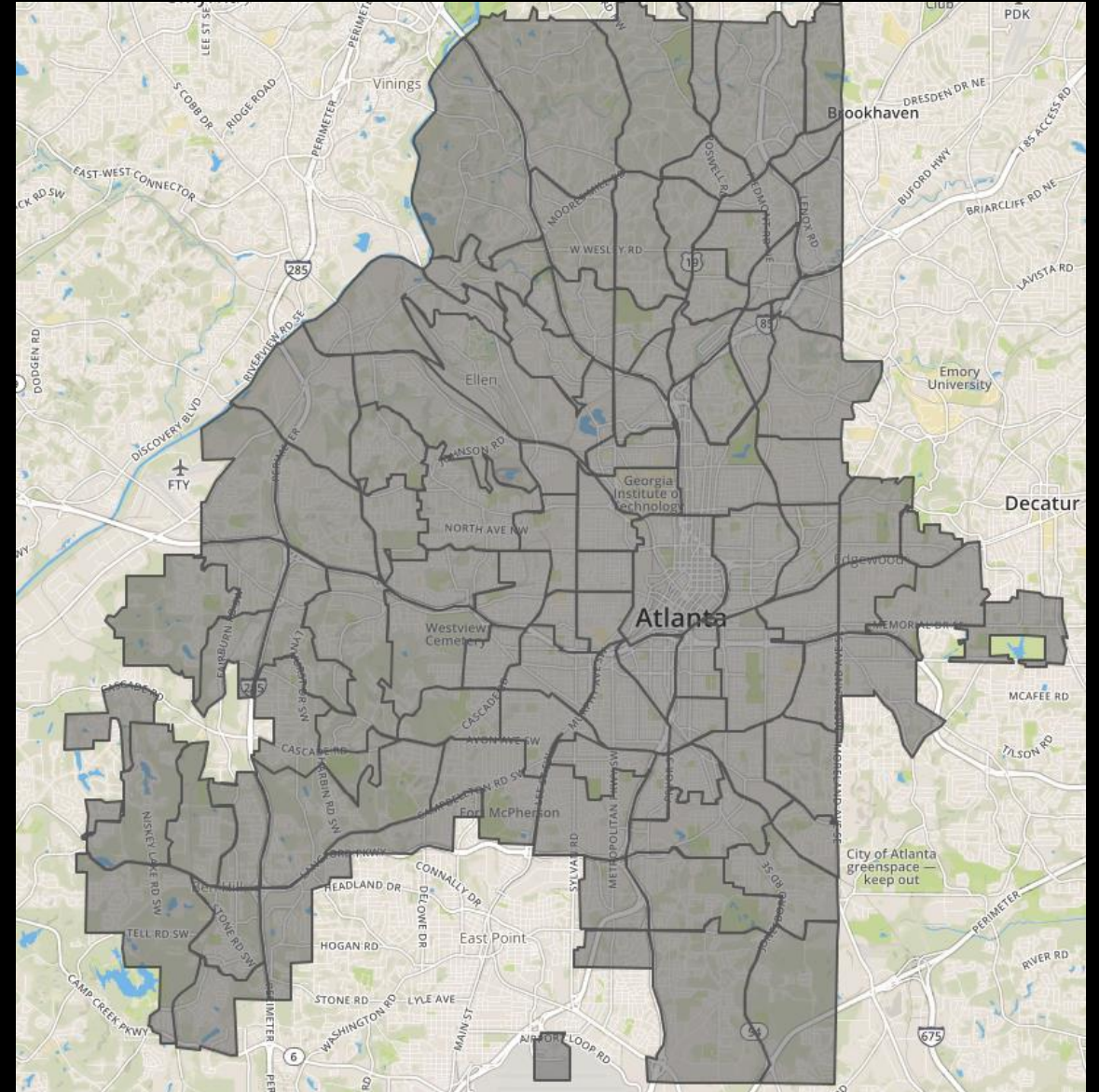
Neighborhood Planning Units

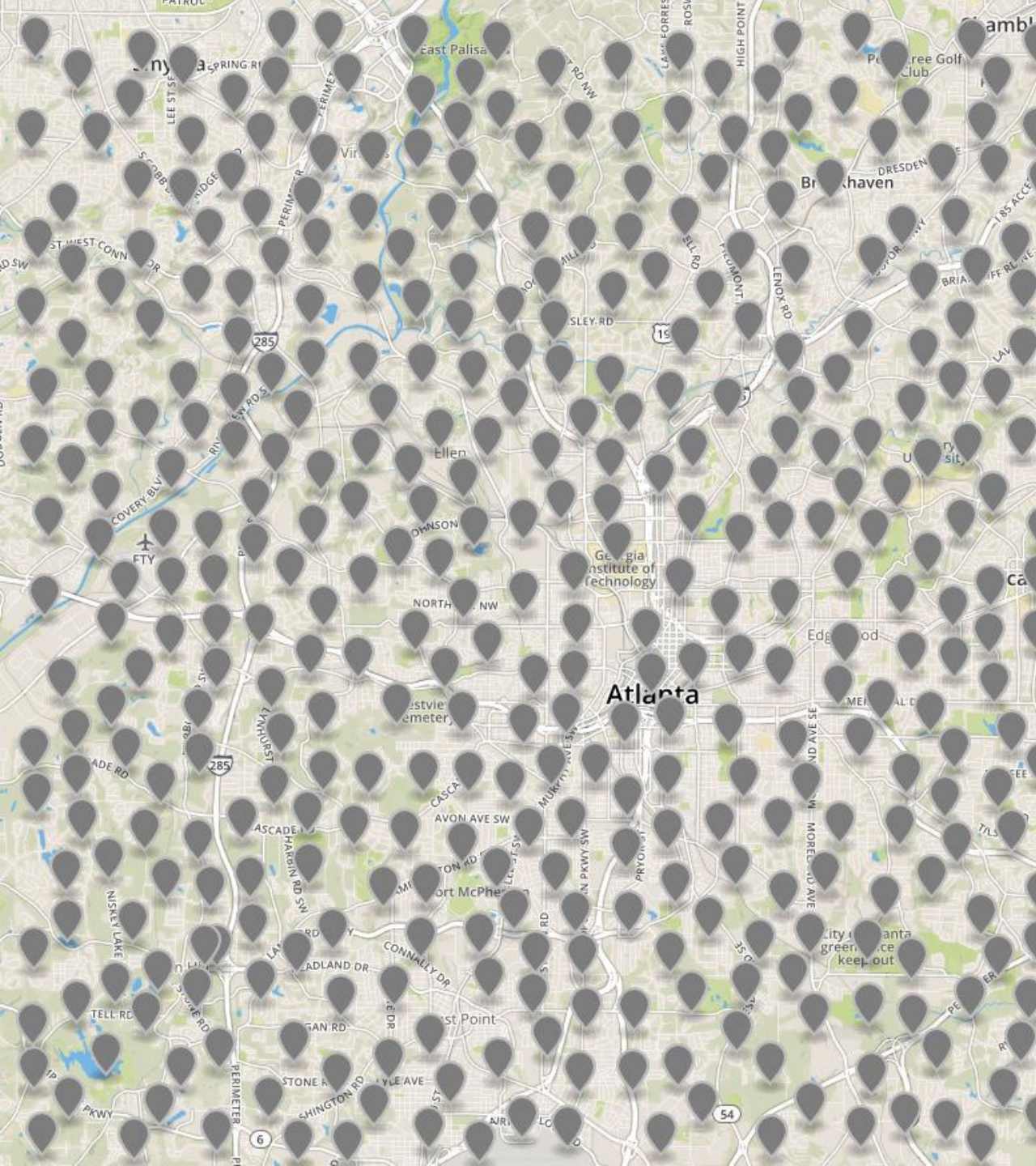
27 coarse regions used for creating
policy



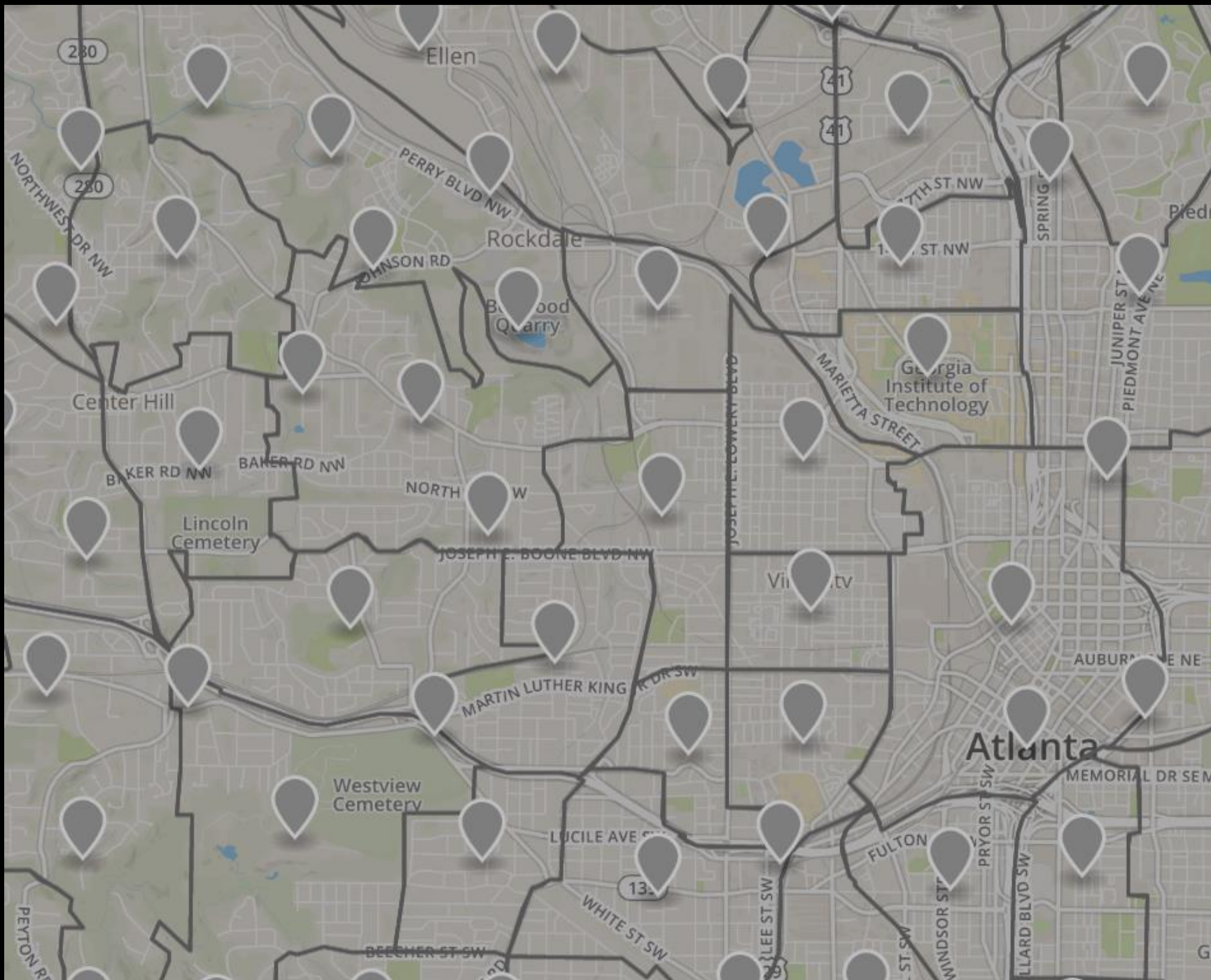
Neighborhoods

- Atlanta Regional Council neighborhoods

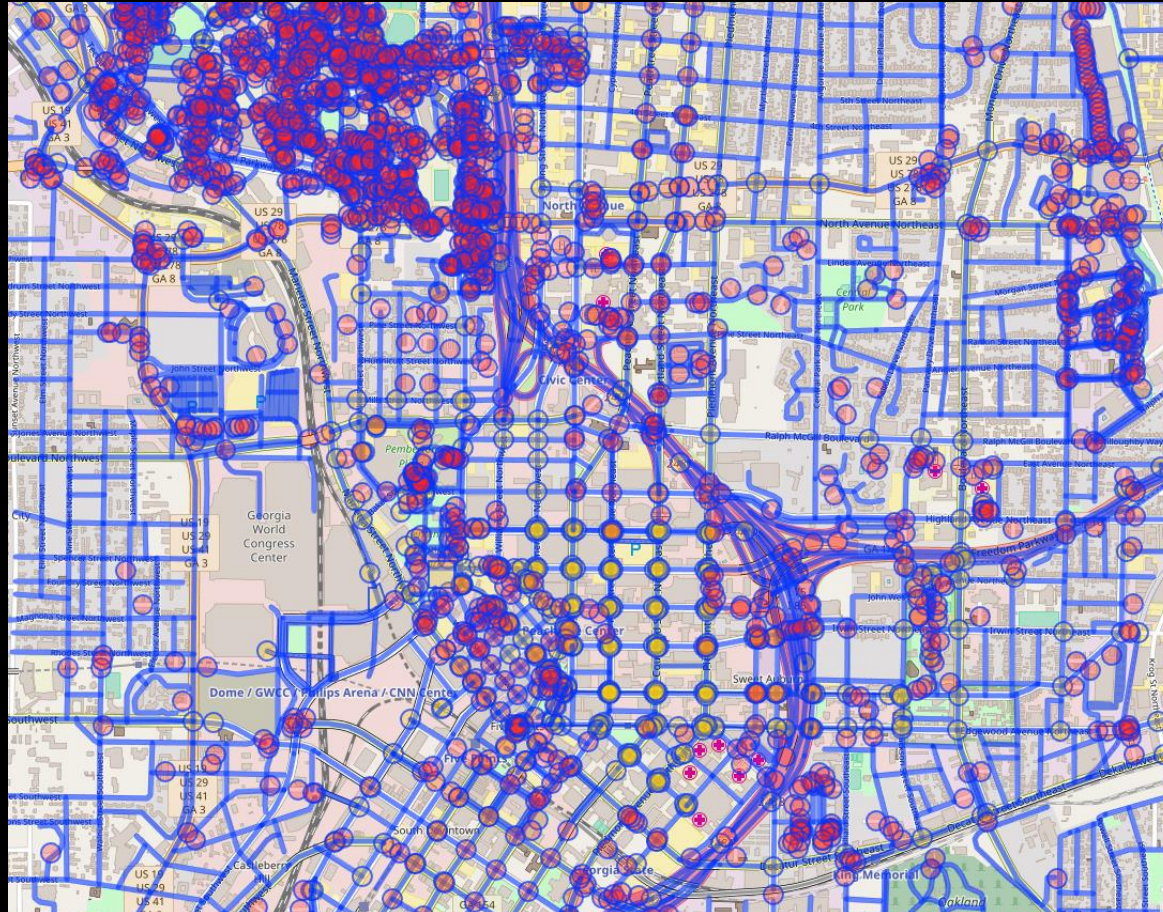




Sampling

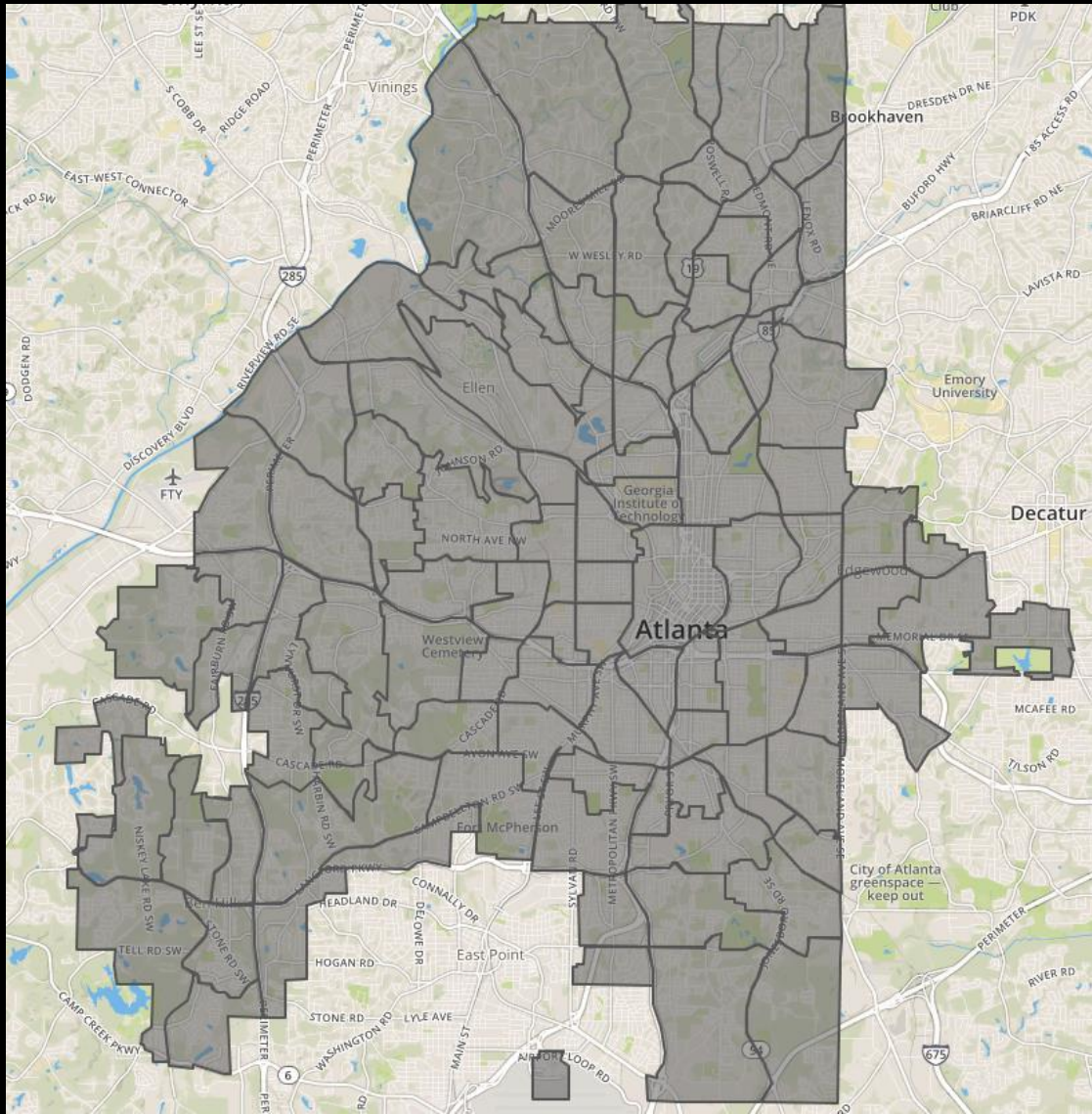


Roads OSM



Clipping to neighborhood shape





daddarinar
b locally raised riverview farms berkshby © b
play gu
earlier encounter
anta... jack
walk — / boholisticbody
car & d
ok needed ... georgia queens goofy s
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babediscuss fun... cat today dis
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appy y'all cocavango eden mfc eastside... toys da
cle mi tenderloimscars x... shopped day at
church pork kings eli finally healthy f
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good

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participated theatre

shirtddog tbla

dog tired
man man
stuffed
darn
dosser w

Conclusions

- We have presented TypoTweet Maps: our approach for capturing representative social media topics about neighborhoods in typographic maps
- Currently most easily explored on a high-resolution printout
- Most road tweets are about accidents

Future Work

- Include interactions for querying locations and topics
- Clean and smooth topic rendering across roads
- Improve performance!
- Alternatives to frequency (e.g., tf-idf)
- Collect more tweets (ongoing)
- Tag tweets with sentiment (ongoing)
- Join to spatial data to show distribution in social media context (e.g., crimes)

Questions?



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