Bananas and tangerines spilled on streets

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Abstract: 1-2 sentences basic introduction into field. 2-3 sentences more detailed background. 1 sentence clearly stating the general problem being addressed by this particular study. 1 sentence summarizing the main result ("here we show"). 2-3 sentences explaining what the main result reveals/adds. 1-2 sentences to put results into more general context. Optional - if accessibility is enhanced by this: 2-3 sentences to provide broader perspective.

1 Introduction

1.1 why do we care?

1 paragraph general motivation - framework of urban data science. why everyone would benefit from having this issue solved. cite arcaute on 'recent advances, lobo on 'urban science'. also: alessandretti 2020, louail 2015, barthelemy books (morphogenesis 2018; spatial networks 2022)

2-3 sentences morphometrics (fleischmann, porta, dibble, etc.) diet 2018 on planar map classification. sharifi on urban forms.

1 paragraph problem description - cite cardillo, geisberger, morer (computational costs), maybe venerandi 2016?; vanegas paper on actually *simulating* these spaces
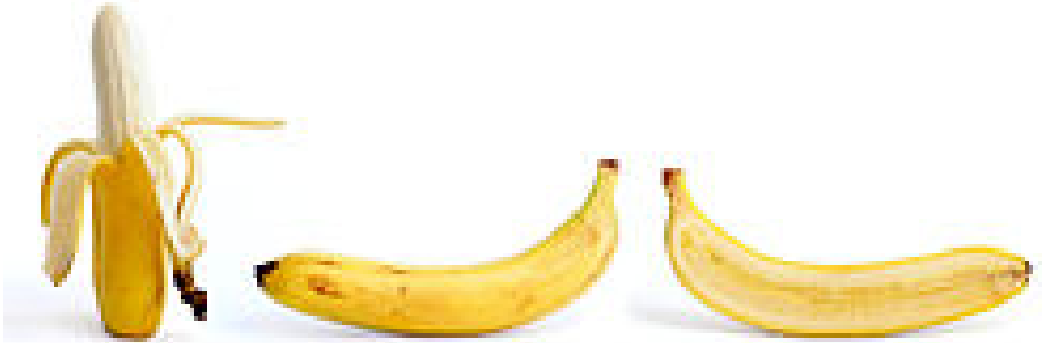
Figure 1: Banana

1 paragraph examples - other authors complaining about the issue, without having solved it yet (e.g. best paper ever [1]); grippa 2018; peponis 2007 merges these into urban blocks (replacing by center lines)

1 paragraph summary of what happens in this paper - 'towards an automated detection of bananas'; method inspired by louf and barthelemy; tried out on X cities across the world, from different morphological classes (cite fleischmann); 2 sentences about using OSM as data source, and OSMnx/geopandas/momepy (...) for processing; code is open source (?) ;

Adding some text here.

2   Method

This is method. And the figure 1 shows the banana.

highways: mention taillanter preprint 2022 (with barthelemy)

nodes: briefly explain why/how DBscan for node consolidation is used (cf. serra et gil for porto?)

edges: description/terminology: cf. hermosilla 2014 'UBRSA'; see strano 2012 for power law of "land cells" (spaces surrounded by street segments); most recent: shpuza 2011, 2017, 2022 (how to get the PDF...). circular compactness - inspired by louf; see also more recent barthelemy 2017 with the same figures;

3   Results

hope/idea: show relevant shape for all use cases (X cities?) choose cities systematically (!?) based on morphological classification

4 Discussion

how to move forward? (sneak preview of google summer of code)

incorporate further data (ideas: directionality; street names; angles; land use; ...) use network formalism: on dual approach (intersections = edges): jiang 2004, yang 2022, rosvall/sneppen; barthelemy paper on shortest path shape

end with a call to action & 'towards open urban data science'

Acknowledgments

References

[1] VYBORNOVA, A., CUNHA, T., GÜHNEMANN, A., AND SZELL, M. Automated detection of missing links in bicycle networks. *Geographical Analysis* (2022).