Parallel PySAL

Autoregression and Complex System Framework Integration

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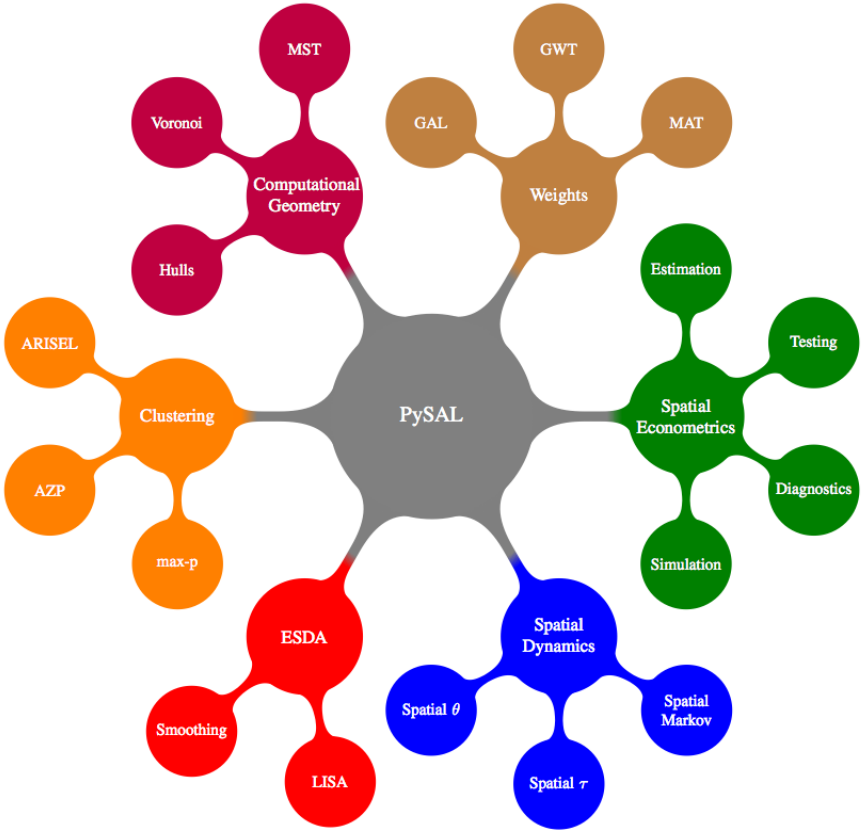
PySAL

Substantive Application: Spatial Econometrics

Implementation

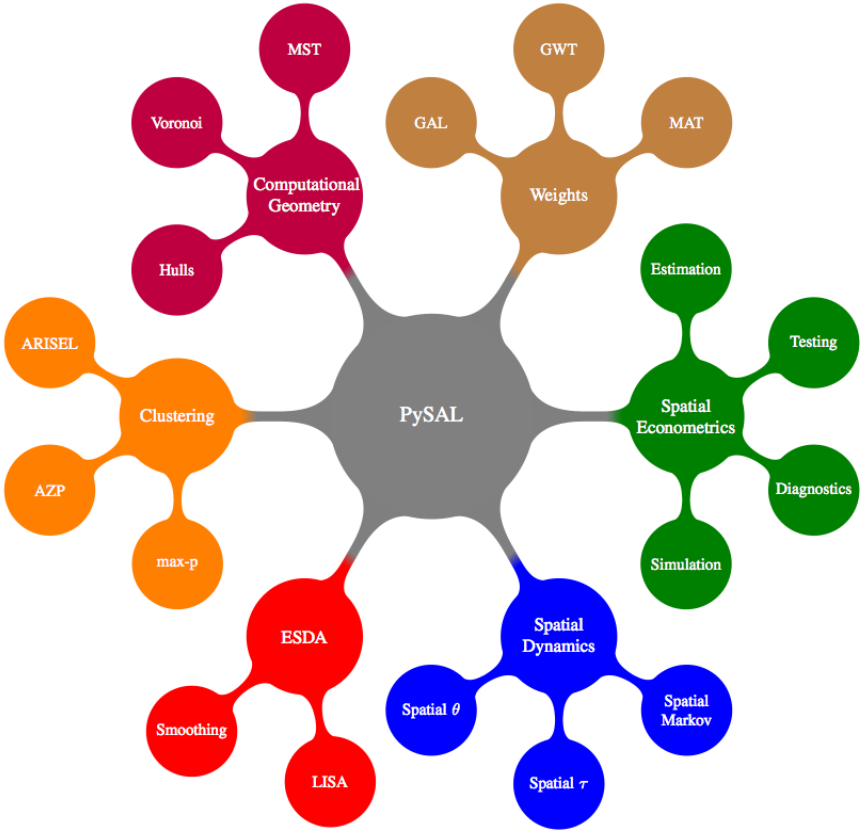
PySAL

- Spatial analysis library
- Big data world
- v 1.8 July 2014



pPySAL

- contiguity builder
- max-p region
- p-lisa
- fisher jenks
- spatial regimes



Lessons Learned

- Hardware dependence
- No holy grail of automatic parallelization
- Need a roadmap = Taxonomy
  - Guidance on "best practice"
  - Identify dead ends

Spatial Econometrics

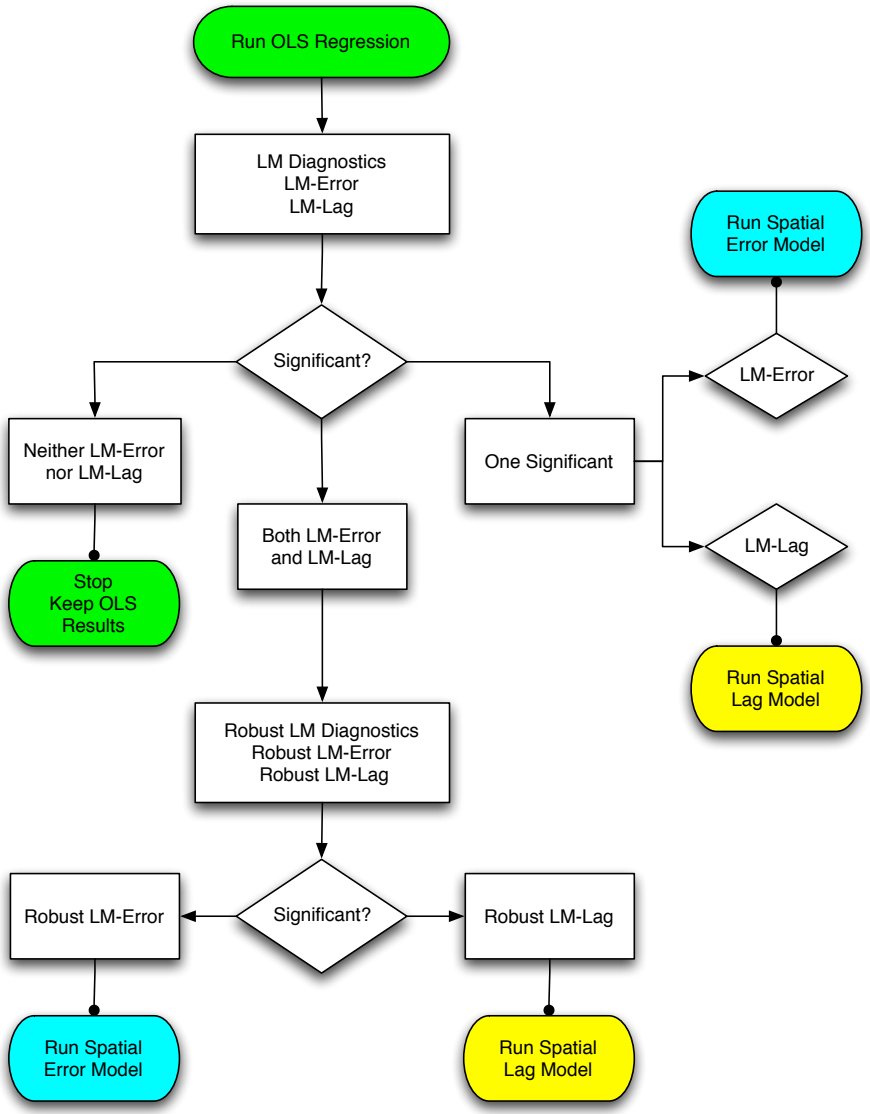
GeoDaSpace

- GUI ontop of spreg
- Subset of spreg functionality
- Cross-platform

Specification Searches

- Specific to General
  - $y = X\beta + \epsilon$
  - OLS + Lagrange Multiplier Tests
- General to Specific
  - $y = \rho Wy + X\beta + (I - \lambda W)^{-1}\nu$
  - ML + Restrictions

LM Based Specification



ArcGIS Toolbox

Hardware

Parallel Strategy

Complex Systems Framework

Components for Autoreg