intro

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intros (others overlap? collaborate!)

- about myself http://theaok.github.io
  - http://theaok.github.io/docs/livability-nov19_aok.pdf
  - https://journals.sagepub.com/doi/full/10.1177/10780874231221205
  - https://theaok.github.io/docs/rel_inn.pdf

- what do you research? (or interested in?)
  - using any data or want to find any data?

outline

why?

what is GIS?

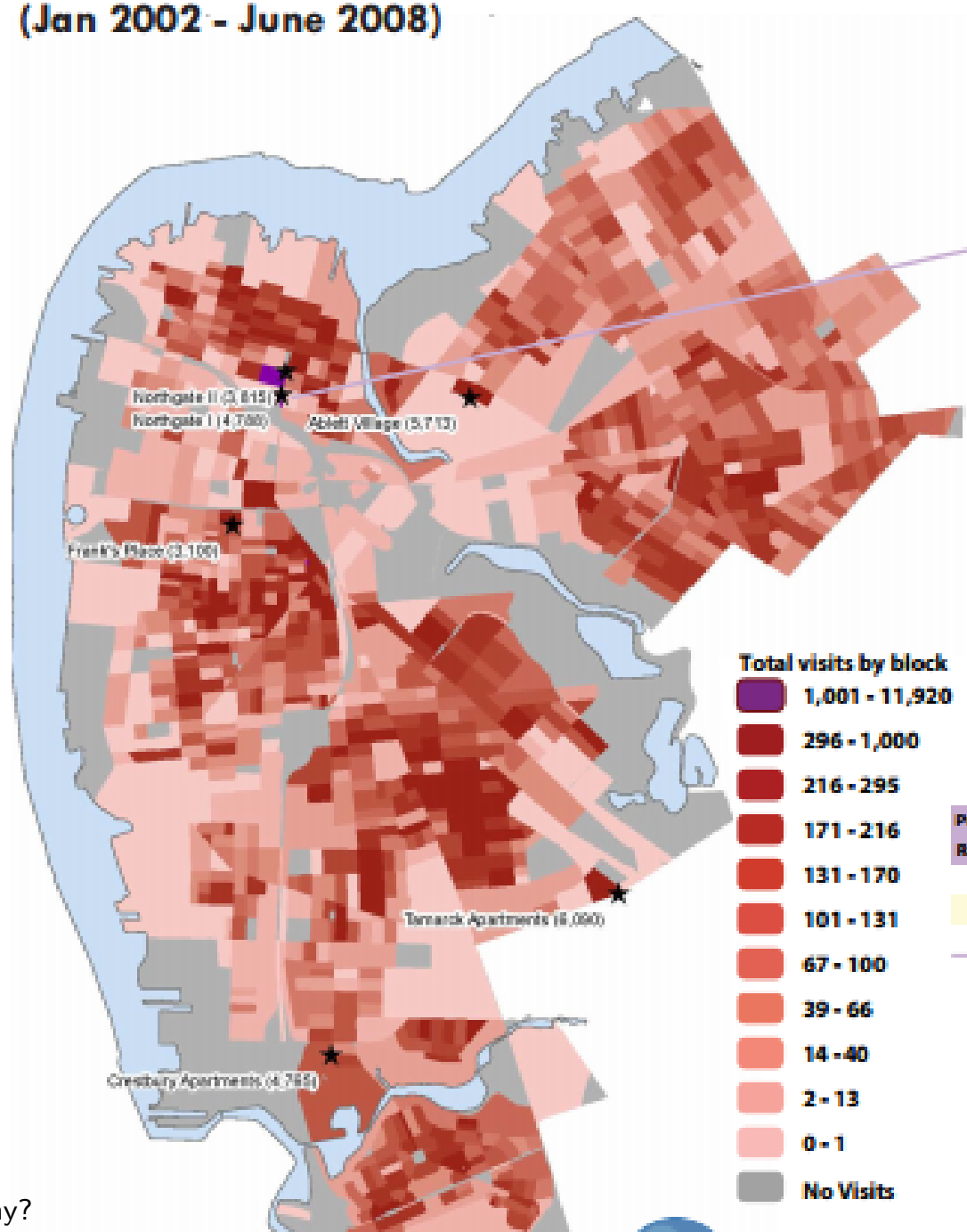
general overview; approach and policies

outline

a general thought about maps

- maps are (almost) always useful
- no matter what you study, it takes place somewhere and place matters
- so use maps for whatever you study in other classes
- and all other projects outside of school
- it will help with understanding of what's going on

Inpatient and Emergency Room Visits in Camden, NJ
(Jan 2002 - June 2008)



Northgate I Public Housing

	Visits	Patients	Charges	Receipts	Collected
Cooper	3,172	749	$42,144,897	$4,994,658	12%
Lourdes	811	337	$7,848,899	$1,038,611	13%
Virtua	805	333	$1,742,487	$345,092	20%
2005	838	378	$10,834,428	$1,288,373	12%
2006	738	355	$8,867,995	$880,549	13%
2007	790	389	$7,979,262	$900,181	11%
ED	3882	978	$6,150,592	$864,019	14%
Inpatient	906	408	$45,584,781	$5,504,342	12%
Total	4,788	1,070	$51,735,374	$6,368,361	12%

Primary Diagnosis		
Rank	ED	Inpatient
1	abdominal pain (789.0)	live birth (V3X.0)
2	acute URI NOS (465.9)	chest pain (786.5)
3	chest pain (786.5)	congestive heart failure NOS (428.0)

why GIS?

- govt (local, intl, etc)
  - zoning, public works (streets, water, sewer, garbage, land ownership/valuation, public safety (fire and police)
  - natural resources (oil, gas, coal, etc)
- uni: "no matter what you study, it takes place somewhere"
- business
  - retail site selection & customer analysis
  - logistics: vehicle tracking & routing
  - natural resource exploration (petroleum, etc.)
  - civil engineering/construction
- you can do a lot with GIS!
- it gives you specific, marketable job skills

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what is there?

- GIS=Geographic Information Systems
  - Geographic: Cities, Roads, Rivers, Countries, etc
  - Information Systems: data, software, programming,
  - like MIS (Management Information Systems) or IT
- GIS=CS(graphics, database/sys adm, coding)+geography
- really, much of the GIS is data management
- geographic=geospatial=spatial

past and future

- much of the GIS has been (still is) done with ArcGIS/ArcMap
  - this is more of a dinosaur, however
- the future is opensource like Python

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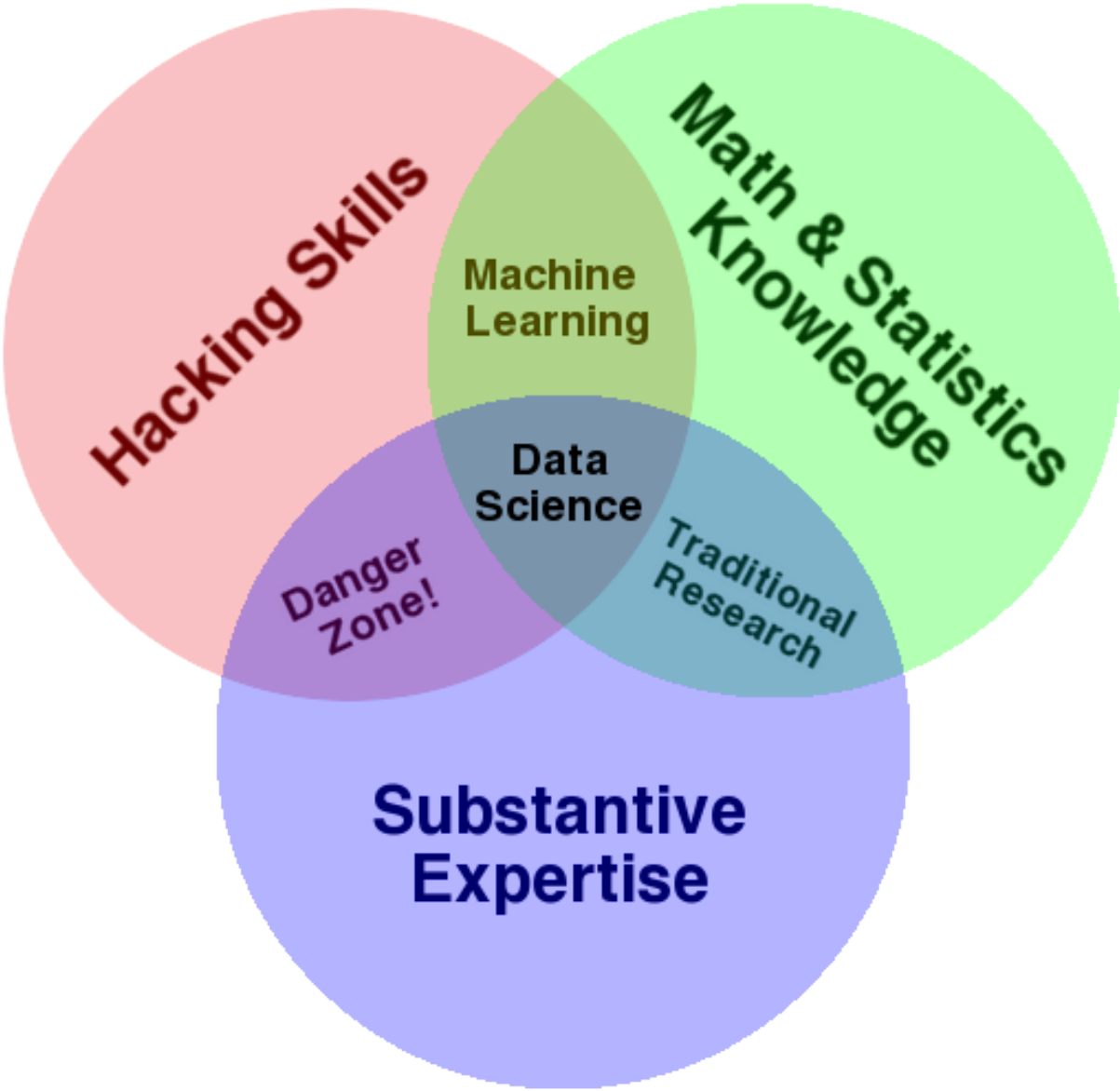
approach

- encouraged to collaborate (prep for class, ps, paper)
- software class! applied, data-driven
- free to choose data/topics as long as relevant to the class
  - bring your own data; kill 2 birds with one stone
  - you need data (with geo: address, city, county, etc)
  - have research interest? you'll find data about it!
  - we'll go over data sources in data.pdf

what data?

- passionate (and knowledgable) about
- quality/quantity easily available
- career advancement in future [can also just start with data from current workplace]

substantive like 30% use it!



awesome and free books and tutorials

- google python class, i love it, its fun, but its rather general (*not* data science or gis) and for IT folks `https://developers.google.com/edu/python/?csw=1`
- definitely one of my favorites! and specifically data science `https://jakevdp.github.io/PythonDataScienceHandbook/`
- another classic, also general and for IT; this one is also complete and lengthy `https://diveintopython3.net`
- `https://realpython.com`
- creator of Pandas, uptodate `https://wesmckinney.com/book`, incl notebooks: `https://github.com/wesm/pydata-book`
- `https://github.com/jupyter/jupyter/wiki#`

more resources

- social sciency `https://autogis-site.readthedocs.io/en/latest` and `https://darribas.org/gds_course/content/home.html`
- natural sciency `https://www.pyngl.ucar.edu/Examples/gallery.shtml` and `https://cdat.llnl.gov/gallery.html`
- and there is a ton of other stuff online, ton of vids on youtube–i'm curious what you guys find most useful? do let me know! i'll add it to the course and it will help future cohorts :)
- also, we could have labs/zoom sessions–say mon at noon? let me know!