Expanding the Tent

Undergraduate Majors in Data Science

bit.ly/expand-tent


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What I 👂

- Commonalities:
  - Excitement and dedication of involved faculty
  - Start with breadth instead of depth, then dive in in subsequent courses for depth
  - Start offering options now if reimagining the whole curriculum will take too long
  - Interdisciplinarity
- Differences:
  - Who teaches the courses?
    - Co-teaching vs. splitting between departments
  - Where does math appear?
    - PCMI: 1st year - Is this math for everyone, regardless of HS preparation?
    - SDS: Flexible
  - When do other disciplines enter into the equation?
    - PCMI: at the end
    - Berkeley: at the beginning

What's happening at  uke

- Interdepartmental major in Data Science between CS + Stats
- Pros:
  - Use existing courses, doesn't need to go through levels of bureaucracy
    - Except for intro to data science
  - Get started quickly, assess interest, maybe use that interest to make case for a "real" major
- Cons:
  - Work within existing structures, as opposed to "dismantle silos"
  - Students might be losing time in existing prereq structures

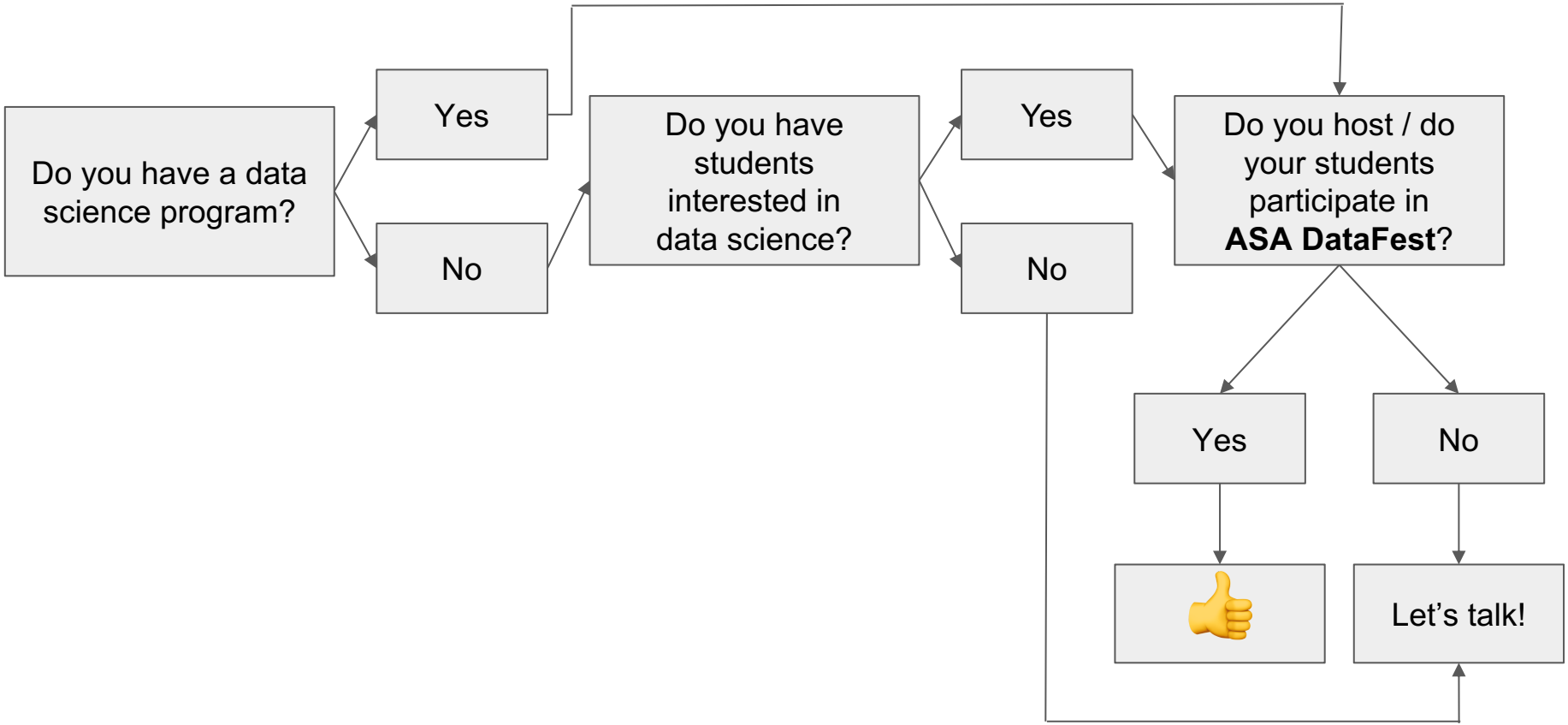
What I ❤️

- Capstone course as a revisiting of the full data analysis cycle, but with more depth than intro
- Consideration for students who stumble upon the data science major “too late”
  - Is this even feasible?
  - Is it more or less feasible than the traditional statistics major?
  - Along these lines, how does a transfer student fit in?

What I 🧐

But they may be there…

- Re: Modeling
  - Hierarchical models
  - Model diagnostics as part of data ethics
- How does this major prepare students for a PhD?
  - Should this even be a concern? (Yes, I think so!)
  - Which PhD: Stats, CS, something else?
- How do we assess “students have an easier time with” / “students like it” / “students are motivated by”?
- What non-curricular / co-curricular / extra-curricular efforts should we invest in as we start / grow data science programs?


Do you have a data science program?
Yes
No
Do you have students interested in data science?
Yes
No
Do you host / do your students participate in **ASA DataFest**?
Yes
No
👍
Let's talk!

What 👩‍🎓 might be wondering

Student: *“If I get a BS in Data Science, who will hire me?”*

Professor: *“Anyone!”*

Student: *“Really?!”*

Data Scientist, Engineering

Google

Software Engineering

San Francisco, CA, United States

Minimum qualifications:

- MS degree in a quantitative discipline (e.g., statistics, operations research, bioinformatics, economics, computational biology, computer science, mathematics, physics, electrical engineering, industrial engineering).

Quantitative Analyst/Statistician, Data Science

Google

Program Management; Technical Solutions

Paris, France

Minimum qualifications:

- PhD degree in a quantitative discipline or equivalent practical experience.

Software Engineer

Google

Software Engineering

Mountain View, CA, United States

Minimum qualifications:

- BS degree in Computer Science, similar technical field of study or equivalent practical experience.

How can community / “the Section” help?

- What resources do people need for pitching such a major in their institutions?
  - What are good responses to “data science is just a fad” or “data science just statistics”?
  - Success stories and statistics from recently launched programs
  - Sample language for successful proposals for data science programs
- Do you have a data science program, or students interested in data science but not yet a program?
  - What courses could you launch?
  - Who can teach them?
- How can we support faculty development?
  - Workshops? When/where? Who pays?
  - Online resources
  - Webinars
  - What else?