Two Lists Enter, One Search Leaves!

Introducing the Pairwise PubMed Search Generator

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Hello!
I'm Marijane.
(she/they)

Currently

- Data and Research Engagement Librarian @ Oregon Health & Science University
- MLA Systematic Review Services Specialization

Previously

- BS in Computer Engineering
- ~18 years in software industry
  - Ontologist/Semantic Modeler
  - Content Manager/Corporate Librarian
  - Technical Writer/Editor
  - Software Testing/Quality Assessment

Interests

- Making building searches less annoying
- Making searches more reproducible
- Python programming

Today

- PubMed's Proximity Search
- Pairwise Combinatorics
- Pairwise PubMed Search Generator

Get ready to answer a poll:

- Go to www.menti.com
- Enter the code on the poll slide to participate

PubMed’s Proximity Search

Join at menti.com | use code 9253 3449

Mentimeter

Do you use PubMed's proximity search?

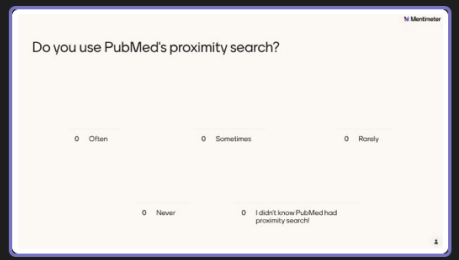
0	0	0	0	0
Often	Sometimes	Rarely	Never	I didn't know PubMed had proximity search!

MW

Menti

PNCMLA 2025

Choose a slide to present



Limitations of PubMed's proximity search

"Unusual syntax"[tiab:~5]

Title, Title/Abstract, and Affiliation fields only

No truncation!

Building searches is tedious and error-prone

Why is PubMed's proximity search like that?

Short answer: Because Solr, the open source search engine software PubMed is currently built upon

Clues from the Standard Query Parser docs:

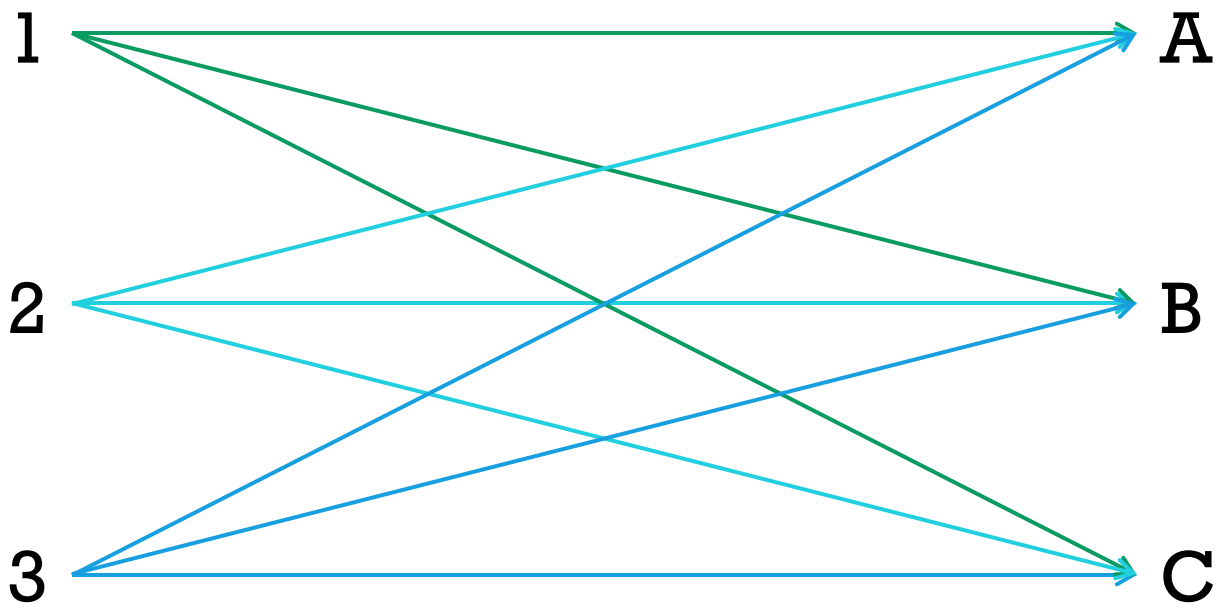
Specifying Terms: A phrase is a group of words surrounded by double quotes such as "hello dolly"

Wildcard Searches: Wildcard characters can be applied to single terms, but not to search phrases

Proximity Searches: To perform a proximity search, add the tilde character ~ and a numeric value to the end of a search phrase. For example, to search for "apache" and "jakarta" within 10 words of each other in a document, use the search: `"jakarta apache"~10`

Pairwise Combinatorics

What does “pairwise” mean?



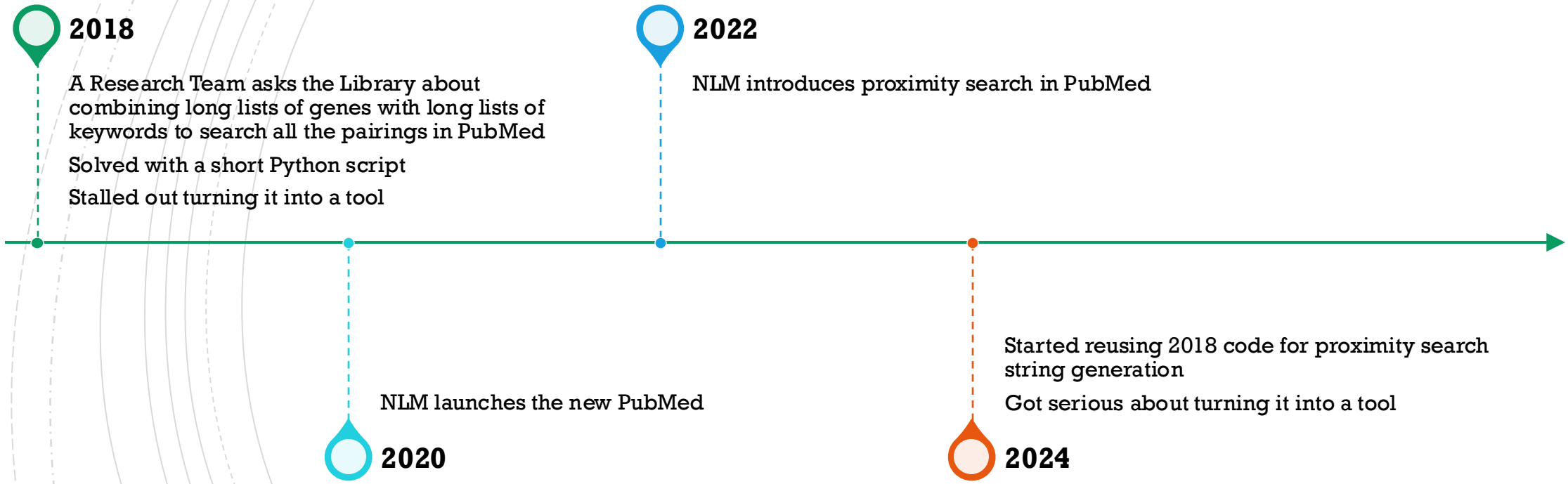
1 A	2 A	3 A
1 B	2 B	3 B
1 C	2 C	3 C

What are pairwise techniques used for?

- Ranking Choices
- Decision Making Tools
- Usability Testing
- Statistical Analyses
- Experimental Research Design
- Software Test Generation
- … not much in libraries or by librarians

Pairwise PubMed Search Generator

Development Timeline



What can it do?

- Generate search strings
  - Combine a list of MeSH main headings with a list of subheadings
  - Combine two lists of search terms in a proximity search
  - Combine two lists of search terms with Boolean AND (intersection)
- Launch searches
  - Copy to clipboard
  - Launch via button
- Built-in example term lists
  - Search topic: frailty measures

Why use it?

- Makes proximity searching in PubMed more accessible
- Eliminates tedious manual typing of variations and combinations
- Prevents syntax errors
- Easily create complex and lengthy search strategies

Demo

https://pairwise-pubmed.streamlit.app/