



# TEXT REUSE

Sandeep Soni

---

11/15/2023

# LeBron James

文 85 languages ▾

Article [Talk](#)

Read [View source](#) [View history](#) Tools ▾

From Wikipedia, the free encyclopedia



"LeBron" redirects here. For his son LeBron James Jr., see [Bronny James](#). For other people with the name, see [Lebrón](#).

**LeBron Raymone James Sr.** (/lə'brɒn/ *lə-BRÖN*; born December 30, 1984) is an American professional basketball player for the [Los Angeles Lakers](#) of the [National Basketball Association](#) (NBA). Nicknamed "King James", he is widely regarded as one of the greatest players in the history of the sport and is often compared to [Michael Jordan](#) in debates over the greatest basketball player of all time.<sup>[a]</sup> James is the [all-time leading scorer in NBA history](#) and ranks fourth in [career assists](#). He has won four [NBA championships](#) (two with the [Miami Heat](#), one each with the [Lakers](#) and [Cleveland Cavaliers](#)), and has competed in 10 [NBA Finals](#), including eight consecutive Finals appearances from 2011 to 2018.<sup>[1]</sup> He has also won four [Most Valuable Player \(MVP\) Awards](#), four [Finals MVP Awards](#), and two [Olympic gold medals](#), and has been named an [All-Star](#) 19 times, selected to the [All-NBA Team](#) 19 times (including 13 First Team selections)<sup>[2][3]</sup> and the [All-Defensive Team](#) six times, and was a runner-up for the [NBA Defensive Player of the Year Award](#) twice in his career.<sup>[4][5]</sup> As of October 2023, he is the [oldest player in the NBA](#).<sup>[6]</sup>

James grew up playing basketball for [St. Vincent–St. Mary High School](#) in his hometown of [Akron, Ohio](#). He was heavily touted by the national media as a future NBA superstar for his all-around scoring, passing, athleticism and playmaking abilities.<sup>[7]</sup> A [prep-to-pro](#), he was selected by the [Cleveland Cavaliers](#) with the [first overall pick](#) of the [2003 NBA draft](#). Named the [2004 NBA Rookie of the Year](#),<sup>[8]</sup> he soon established himself as one of the league's premier players, leading the Cavaliers to their first NBA Finals appearance in [2007](#) and winning the NBA MVP award in [2009](#) and [2010](#).<sup>[4]</sup> After failing to win a championship with Cleveland, James left in [2010](#) as a [free agent](#) to join the [Miami Heat](#);<sup>[9]</sup> this was announced in a nationally televised special titled *The Decision* and is among the most controversial free agency moves in sports history.<sup>[10]</sup>

LeBron James



James with the [Los Angeles Lakers](#) in 2022

## No. 23 – Los Angeles Lakers

**Position** Small forward / power forward

**League** NBA

## Personal information

**Born** December 30, 1984 (age 38)

Akron, Ohio, U.S.



Summarize the following paragraph in two sentences:

LeBron Raymone James Sr. (/lə'brɒn/ lə-BRON; born December 30, 1984) is an American professional basketball player for the Los Angeles Lakers of the National Basketball Association (NBA). Nicknamed "King James", he is widely regarded as one of the greatest players in the history of the sport and is often compared to Michael Jordan in debates over the greatest basketball player of all time.[a] James is the all-time leading scorer in NBA history and ranks fourth in career assists. He has won four NBA championships (two with the Miami Heat, one each with the Lakers and Cleveland Cavaliers), and has competed in 10 NBA Finals, including eight consecutive Finals appearances from 2011 to 2018.[1] He has also won four Most Valuable Player (MVP) Awards, four Finals MVP Awards, and two Olympic gold medals, and has been named an All-Star 19 times, selected to the All-NBA Team 19 times (including 13 First Team selections)[2][3] and the All-Defensive Team six times, and was a runner-up for the NBA Defensive Player of the Year Award twice in his career.[4][5] As of October 2023, he is the oldest player in the NBA.[6]



[View other drafts](#)



LeBron James is an American professional basketball player widely regarded as one of the greatest players in the history of the sport. He has won four NBA championships, four Most Valuable Player (MVP) Awards, and four Finals MVP Awards, and has been named an All-Star 19 times.

LeBron Raymone James Sr. (/lə'brɒn/ lə-BRON; born December 30, 1984) is an American professional basketball player for the Los Angeles Lakers of the National Basketball Association (NBA). Nicknamed "King James", he is widely regarded as one of the greatest players in the history of the sport and is often compared to Michael Jordan in debates over the greatest basketball player of all time.[a] James is the all-time leading scorer in NBA history and ranks fourth in career assists. He has won four NBA championships (two with the Miami Heat, one each with the Lakers and Cleveland Cavaliers), and has competed in 10 NBA Finals, including eight consecutive Finals appearances from 2011 to 2018.[1] He has also won four Most Valuable Player (MVP) Awards, four Finals MVP Awards, and two Olympic gold medals, and has been named an All-Star 19 times, selected to the All-NBA Team 19 times (including 13 First Team selections)[2][3] and the All-Defensive Team six times, and was a runner-up for the NBA Defensive Player of the Year Award twice in his career.[4][5] As of October 2023, he is the oldest player in the NBA.[6]

LeBron James is an American professional basketball player widely regarded as one of the greatest players in the history of the sport. He has won four NBA championships, four Most Valuable Player (MVP) Awards, and four Finals MVP Awards, and has been named an All-Star 19 times.

LeBron Raymone James Sr. (/lə'brɒn/ lə-BRON; born December 30, 1984) is an American professional basketball player for the Los Angeles Lakers of the National Basketball Association (NBA). Nicknamed "King James", he is widely regarded as one of the greatest players in the history of the sport and is often compared to Michael Jordan in debates over the greatest basketball player of all time.[a] James is the all-time leading scorer in NBA history and ranks fourth in career assists. He has won four NBA championships (two with the Miami Heat, one each with the Lakers and Cleveland Cavaliers), and has competed in 10 NBA Finals, including eight consecutive Finals appearances from 2011 to 2018.[1] He has also won four Most Valuable Player (MVP) Awards, four Finals MVP Awards, and two Olympic gold medals, and has been named an All-Star 19 times, selected to the All-NBA Team 19 times (including 13 First Team selections)[2][3] and the All-Defensive Team six times, and was a runner-up for the NBA Defensive Player of the Year Award twice in his career.[4][5] As of October 2023, he is the oldest player in the NBA.[6]

LeBron James is an American professional basketball player widely regarded as one of the greatest players in the history of the sport. He has won four NBA championships, four Most Valuable Player (MVP) Awards, and four Finals MVP Awards, and has been named an All-Star 19 times.

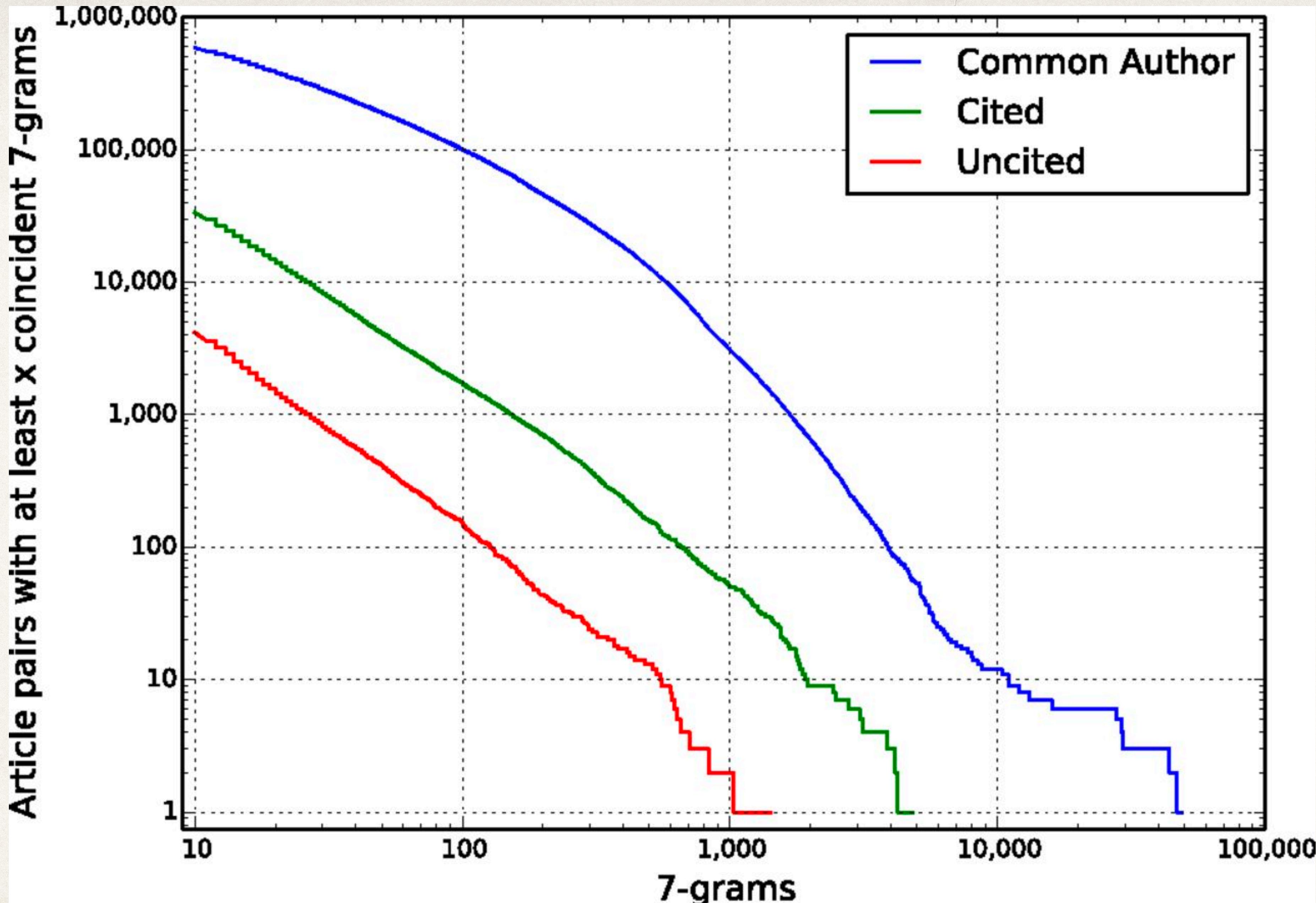
LeBron Raymone James Sr. (/lə'brɒn/ lə-BRON; born December 30, 1984) is an American professional basketball player for the Los Angeles Lakers of the National Basketball Association (NBA). Nicknamed "King James", he is widely regarded as one of the greatest players in the history of the sport and is often compared to Michael Jordan in debates over the greatest basketball player of all time.[a] James is the all-time leading scorer in NBA history and ranks fourth in career assists. **He has won four NBA championships** (two with the Miami Heat, one each with the Lakers and Cleveland Cavaliers), and has competed in 10 NBA Finals, including eight consecutive Finals appearances from 2011 to 2018.[1] He has also won four Most Valuable Player (MVP) Awards, four Finals MVP Awards, and two Olympic gold medals, and has been named an All-Star 19 times, selected to the All-NBA Team 19 times (including 13 First Team selections)[2][3] and the All-Defensive Team six times, and was a runner-up for the NBA Defensive Player of the Year Award twice in his career.[4][5] As of October 2023, he is the oldest player in the NBA.[6]

LeBron James is an American professional basketball player widely regarded as one of the greatest players in the history of the sport. **He has won four NBA championships**, four Most Valuable Player (MVP) Awards, and four Finals MVP Awards, and has been named an All-Star 19 times.

# TEXT REUSE

---

- As the name suggests, text reuse is a form of copying, borrowing or repeating parts of text either within a document or across documents.



Citron and Ginsparg (2014) Patterns of text reuse in a scientific corpus

Christopher Marlowe, *The Passionate Shepherd to His Love*

Come live with me and be my love,  
And we will all the pleasures prove,  
That Valleys, groves, hills, and fields,  
Woods, or steepy mountain yields.  
And we will sit upon the Rocks,  
Seeing the Shepherds feed their flocks,  
By shallow Rivers to whose falls  
Melodious birds sing Madrigals.  
And I will make thee beds of Roses  
And a thousand fragrant posies,

Annie Lennox, *Live with me and be my love*

Live with me, and be my love,  
And we will all the pleasures prove  
By hills and valleys, dales and fields,  
And all the pleasant pastures yields.  
There will we sit upon the rocks,  
And see the shepherds feed their flocks,  
By shallow rivers, by whose falls  
Melodious birds sing madrigals.  
There will I make thee a bed of roses,  
With a thousand fragrant posies.

# WHY QUANTIFY TEXT REUSE/DUPLICATION?

---

- Ability to identify duplicated text comes in handy in developing language technology

# Deduplicating Training Data Makes Language Models Better

Katherine Lee<sup>\*†</sup>

Daphne Ippolito<sup>\*†‡</sup>

Andrew Nystrom<sup>†</sup>

Chiyuan Zhang<sup>†</sup>

Douglas Eck<sup>†</sup>

Chris Callison-Burch<sup>‡</sup>

Nicholas Carlini<sup>†</sup>

## Abstract

We find that existing language modeling datasets contain many near-duplicate examples and long repetitive substrings. As a result, over 1% of the unprompted output of language models trained on these datasets is copied verbatim from the training data. We develop two tools that allow us to deduplicate training datasets—for example removing from C4 a single 61 word English sentence that is repeated over 60,000 times. Deduplication allows us to train models that emit memorized text ten times less frequently and require fewer training steps to achieve the same or better accuracy. We can also reduce train-test overlap, which affects over 4% of the validation set of standard datasets, thus allowing for more accurate evaluation. Code for deduplication is released at <https://github.com/google-research/deduplicate-text-datasets>.

We show that one particular source of bias, duplicated training examples, is pervasive: all four common NLP datasets we studied contained duplicates. Additionally, all four corresponding validation sets contained text duplicated in the training set. While naive deduplication is straightforward (and the datasets we consider already perform some naive form of deduplication), performing thorough deduplication at scale is both computationally challenging and requires sophisticated techniques.

We propose two scalable techniques to detect and remove duplicated training data. *Exact* substring matching identifies verbatim strings that are repeated. This allows us to identify cases where only part of a training example is duplicated (§4.1). *Approximate* full document matching uses hash-based techniques (Broder, 1997) to identify pairs of documents with high  $n$ -gram overlap (§4.2).

We identify four distinct advantages to training on datasets that have been thoroughly deduplicated.

Deduplication allows models to emit memorized text; decreases training time; and improves accuracy

# Quantifying the Effects of Text Duplication on Semantic Models

Alexandra Schofield<sup>1</sup> Laure Thompson<sup>1</sup> David Mimno<sup>2</sup>

1 Department of Computer Science, Cornell University, Ithaca, NY  
`{xanda, laurejt}@cs.cornell.edu`

2 Department of Information Science, Cornell University, Ithaca, NY  
`mimno@cornell.edu`

## Abstract

Duplicate documents are a pervasive problem in text datasets and can have a strong effect on unsupervised models. Methods to remove duplicate texts are typically heuristic or very expensive, so it is vital to know when and why they are needed. We measure the sensitivity of two latent semantic methods to the presence of different levels of document repetition. By artificially creating different forms of duplicate text we confirm several hypotheses about how repeated text impacts models. While a small amount of duplication is tolerable, substantial over-representation of subsets of the text may overwhelm meaningful topical patterns.

value fit on repeated texts, or even “leak” held out data that is duplicated in the training data. At best, duplication may cause us to overestimate the expressiveness and reliability of models. At worst, models skewed by text duplication may invalidate any conclusions drawn from them, and, by extension, the method itself.

Text replication is a persistent and difficult problem in natural language corpora. In social media settings, partial duplication due to quotation and threading is ubiquitous. Of the 20k posts in the 20 Newsgroups corpus (Lang, 1995), 1151 are exact duplicates, and 25% of the remaining tokens are quoted text from other newsgroup messages.<sup>1</sup> In literary corpora, different versions of the same document may also conflict: text files for Hamlet may differ slightly due to publisher information, line numbers, editorial changes be-

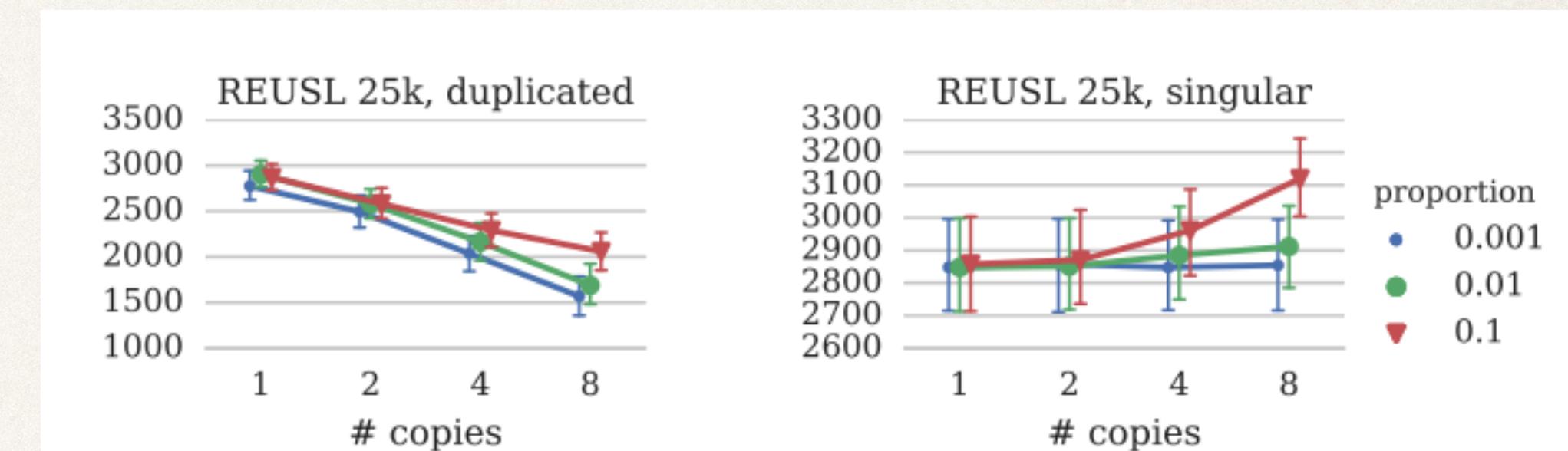
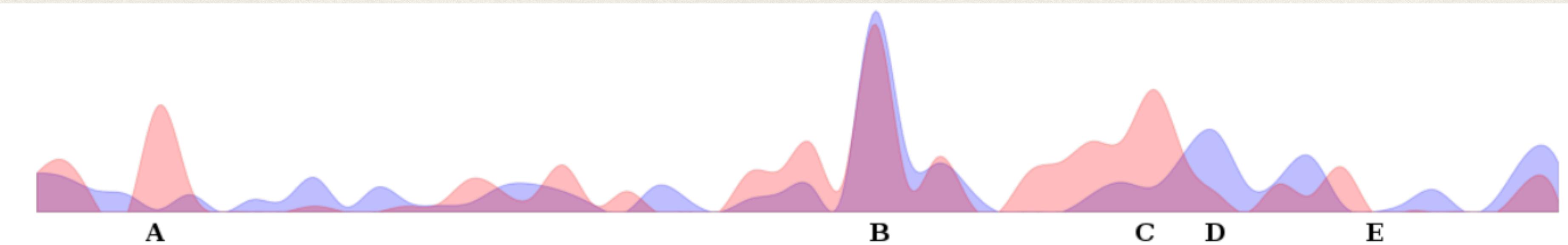


Figure 1: Training perplexity with LDA models trained on the REUSL 25k corpus with 80 topics. Perplexity decreases significantly for the duplicated documents with repetition, but the effect on singular documents is negligible with repeated proportion of the corpus smaller than 0.1.

# WHY QUANTIFY TEXT REUSE/DUPLICATION?

---

- Allows us to ask socially relevant questions:
  - Who borrows what from whom and to what end?



**Figure 1: Volume of quotations for each word from a fragment of the 2010 State of the Union Address split by political leaning: conservative outlets shown in red and liberal outlets shown in blue. Quotes from the marked positions are reproduced in Table 1 and shown in the QUOTUS visualization in Figure 2.**

Position	Quote from the 2010 State of the Union Address
A	And in the last year, hundreds of al Qaeda's fighters and affiliates, including many senior leaders, have been captured or killed—far more than in 2008.
B	I will work with Congress and our military to finally repeal the law that denies gay Americans the right to serve the country they love because of who they are. It's the right thing to do.
C	Each time lobbyists game the system or politicians tear each other down instead of lifting this country up, we lose faith. The more that TV pundits reduce serious debates to silly arguments, big issues into sound bites, our citizens turn away.
D	Democracy in a nation of 300 million people can be noisy and messy and complicated. And when you try to do big things and make big changes, it stirs passions and controversy. That's just how it is.
E	But I wake up every day knowing that they are nothing compared to the setbacks that families all across this country have faced this year.

# TYPES OF TEXT REUSE

---

- Direct Vs. Indirect Quotations
- Paraphrasing
- Summarizing
- Verbatim and Non-Verbatim copying

What are some applications you have in mind in which you may want to detect if text is being copied or reproduced in part or full?

# OUR FOCUS

---

- There are many ways to identify duplicated text or quantify the similarity between pairs of texts.
- We will focus on these two topics:
  - Detect (near) duplicates
  - Sequence alignment

# DUPLICATES

---

This is a sentence

This is a sentence

If we break a textual sequence into pieces (say words) then duplicates are pairs that have the same pieces and in the same order

# DUPLICATES

---

This is a sentence

This is a sentence

One way to find duplicates in a text corpus is to do pairwise comparisons

# DUPLICATES

---

What a life!

This is a sentence

What a life!

What a life!

This is a sentence

This is a sentence

What a life!

This is a sentence

In a large corpus of  $n$  documents, we end up making many many comparisons

# DUPLICATES

---

What a life!

This is a sentence

What a life!

What a life!

This is a sentence

This is a sentence

What a life!

This is a sentence

In a large corpus of  $n$  documents, we end up making many many comparisons

# DUPLICATES

---

What a life!

This is a really really really long sentence

This is a sentence

This is a really really really long sentence

What a life!

What a life!

This is a really really really long sentence

This is a sentence

What a life!

This is a sentence

The computational cost of pairwise comparison is also dependent on the length of the document

# HASHING

---

- Consider a function  $h$ , called a hash function, that takes input as text and produces a hash or a signature
- Same documents produce the same signature, so duplicate documents can be isolated by maintaining a hashtable
- Fast and scales well to document length
- Examples: md5 or SHA, n-gram signatures

# NEAR DUPLICATES

---

What a life!

This is a really really really long sentence

This is a sentence

This is a really really really long sentence

What a life!

What a life!

This is a really really really long sentence

This is a good sentence

What a life!

This is a good sentence

Ideally we want to group duplicates and almost duplicates together

# LOCALITY SENSITIVE HASHING

---

- Design a hash function  $h$ , that takes that maps similar documents into the same bucket with high probability and dissimilar documents into the same bucket with low probability
- There are many ways to come up with such hash functions

# LOCALITY SENSITIVE HASHING

---

This is a sentence

What a life!

# LOCALITY SENSITIVE HASHING

---

This is a sentence

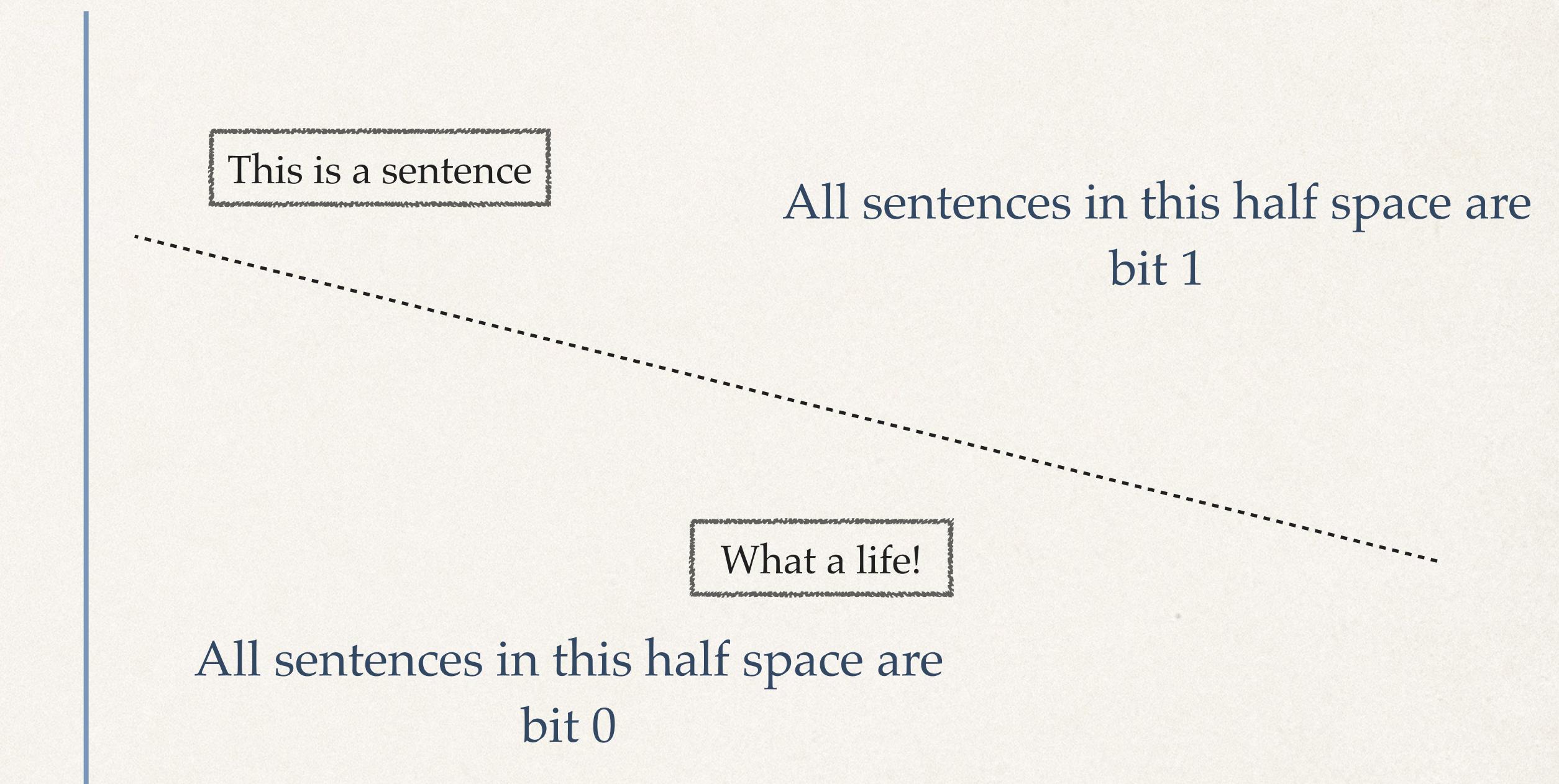
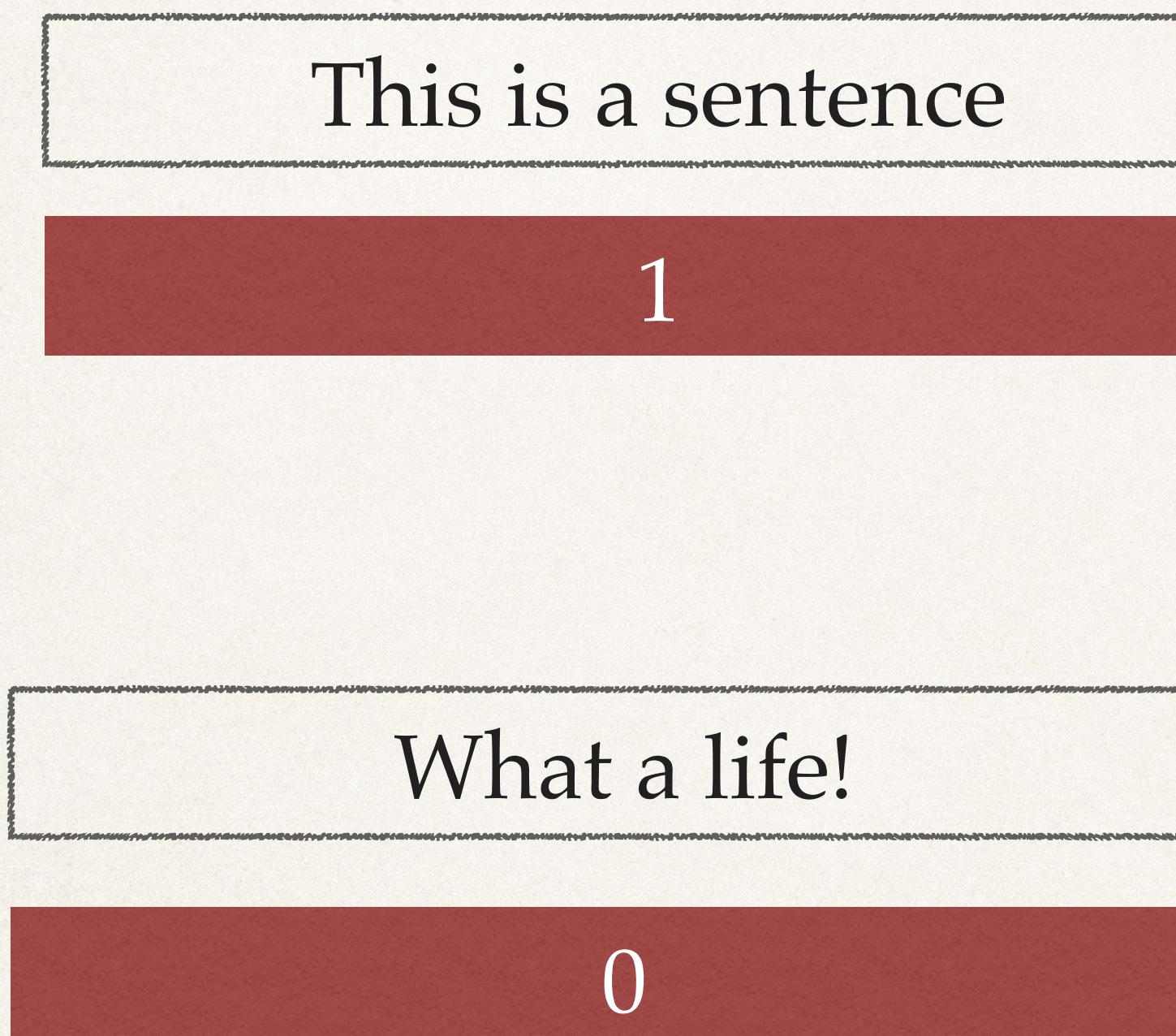
What a life!

This is a sentence

What a life!

# LOCALITY SENSITIVE HASHING

---



# LOCALITY SENSITIVE HASHING

---

This is a sentence

1 0

What a life!

0 1

All sentences in this space are given  
bit 0

This is a sentence

All sentences in this space are given  
bit 1

What a life!

# LOCALITY SENSITIVE HASHING

---

This is a sentence

1 0 0

What a life!

0 1 0

This is a sentence

What a life!

# LOCALITY SENSITIVE HASHING

---

This is a sentence

1 0 0 1

What a life!

0 1 0 1

This is a sentence

What a life!

# LOCALITY SENSITIVE HASHING

---

This is a sentence

1 0 0 1...0

What a life!

0 1 0 1...0

# LOCALITY SENSITIVE HASHING

---

This is a sentence

1 0 0 1...0

What a life!

0 1 0 1...0

It can be proven that this method can produce signatures that map texts into buckets that have similar documents with high probability

# LOCALITY SENSITIVE HASHING

---

- Locality sensitive hashing is useful to find similar documents, to cluster documents, etc

# SEQUENCE ALIGNMENT

---

- Another systematic way of quantifying duplication across texts is to assume is to do pairwise comparison

# SEQUENCE ALIGNMENT

---

This is a text

Noisy channel

This is a long text

Sequences become duplicates or near duplicates after passing through a noisy channel which garbles part of the text

# SEQUENCE ALIGNMENT

---

This      is      a      text

This      is      a      long      text

# SEQUENCE ALIGNMENT

---

This      is      a      -      text

This      is      a      long      text

We try to align the sequences such that they maximize the matches

# SCORING SYSTEM

---

This      is      a      -      text

This      is      a      long      text

Word matches = +1

Word mismatches = -1

# SCORING SYSTEM

---

This      is      a      -      text

Score=3

This      is      a      long      text

Word matches = +1

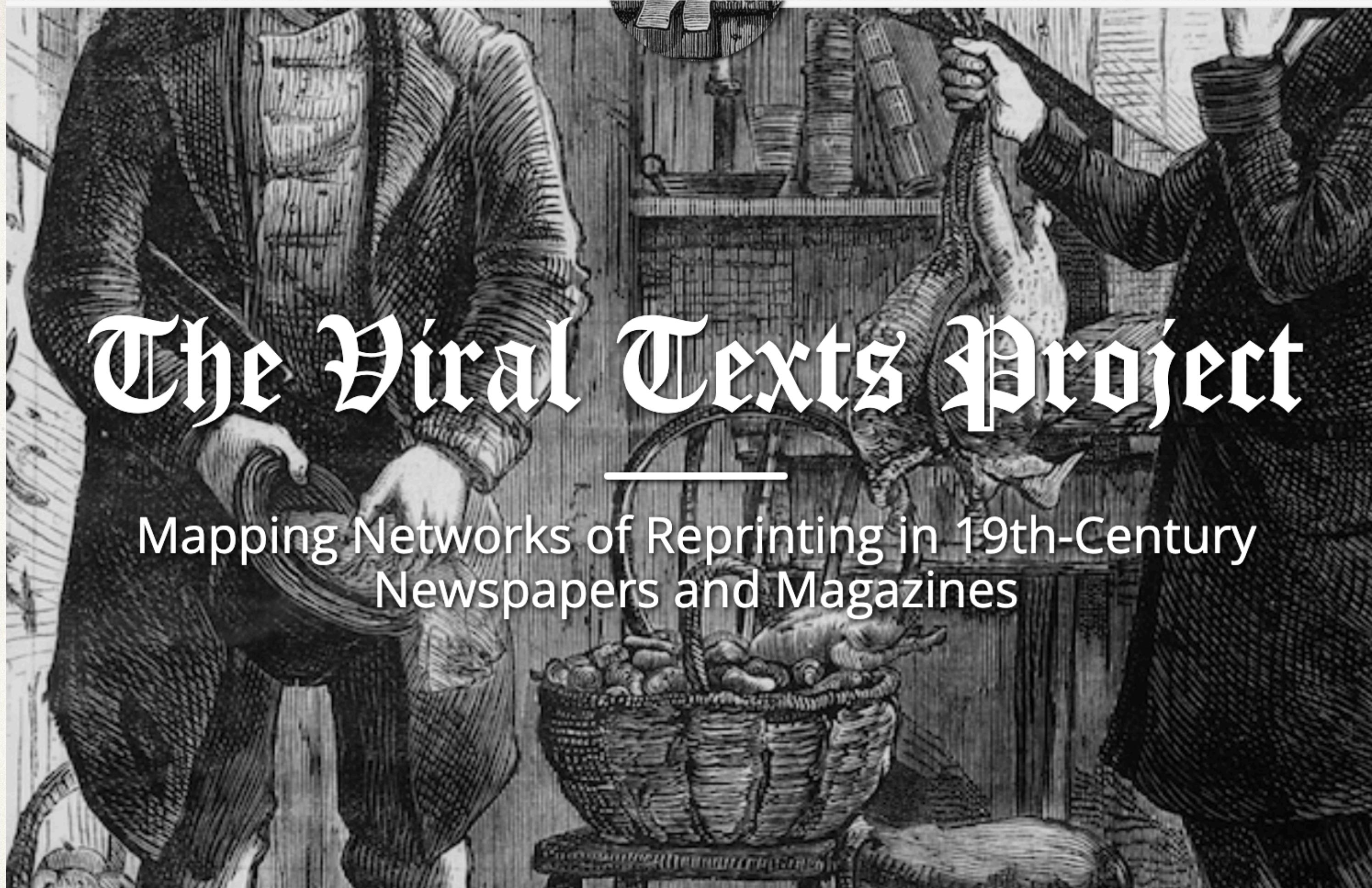
Word mismatches = -1

# SEQUENCE ALIGNMENT

---

- Many ways to quantify distances between sequences
- Algorithms usually compute the distance using dynamic programming
- Variations include aligning pairs or aligning multiple sequences at the same time
- Example: Smith-Waterman, Needleman-Wunsch

What can text reuse tell us?



# The Viral Texts Project

---

Mapping Networks of Reprinting in 19th-Century  
Newspapers and Magazines

*“Nothing but a newspaper can drop the same thought into a thousand minds at the same moment...”*

—Alexis de Tocqueville, *Democracy in America*

# The Raftsmoor's Journal

BY S. J. ROW.

CLEARFIELD, PA., WEDNESDAY, NOVEMBER 4, 1868.

VO

## Select Poetry.

### MARJORIE'S ALMANAC.

Robins in the tree tops,  
Blooms in the grass;  
Green things a-growing  
Everywhere at pass;  
Sudden little breezes,  
Showers of silver dew,  
Black bough and bent twig  
Building out anew;  
Pine tree and willow tree,  
Fringed elm and larch—  
Don't you think that May-time's  
Pleasanter than March?

Apples in the orchard,  
Mallow one by one;  
Strawberries upturning  
Soft cheeks to the sun;  
Roses, faint with sweetness,  
Lillies, fair of face;  
Drowsy scents and murmurs  
Haunting every place;  
Lengths of golden sunshine,  
Moonlight bright as day—  
Don't you think that summer's  
Pleasanter than May?

Roger in the corn patch  
Whistling negro songs;  
Pussy by the hearth side,  
Romping with the tongs;  
Chestnuts in the ashes,  
Burning through the rind;  
Red leaf and gold leaf  
Rustling down the wind;  
Mother "doin' peaches"  
All the afternoon—  
Don't you think that Autumn's  
Pleasanter than June?

Little fairy snow flakes  
Dancing in the flue,  
Old Mr. Santa Claus,  
What is keeping you?  
Twilight and fire-light,  
Shadows come and go;  
Merry chimes of sleigh bells,  
Tinkling through the snow;  
Mother's knitting stockings,  
(Pussy's got the ball)—  
Don't you think that Winter's  
Pleasanter than all?

### THE DASHFORD TRAGEDY.

Dashford had a sensation, and it was so new a thing that all the village was agog—with care to hear of, and eyes to view the object. Everybody in the place, probably, who could read, had read the name on the books of the Red Mug—Charles Wylie, New York City.

The Red Mug was the centre of attraction.

After his sign was put out it was positively alarming to observe how unhealthy Dashford suddenly became. Hitherto people, for the most part, had died either by accidents or from old age—but now the entire female community had gone ill. Coughs, colds, nervous diseases, fevers, and disordered livers was the rule, and not the exception.

Dr. Wylie was kept riding for the greater part of the time, and the principal wonder was when the poor fellow contrived to obtain any sleep. He was an immense favorite with the ladies, both old and young. He had such sad eyes when his countenance was at rest that they were sure he must have some secret trouble—and there is no surer method for a man to make himself interesting than to give people the impression that he is bearing in silence some great sorrow.

Though polite and courteous to all, Dr. Wylie was not long in making his selection, and it did infinite credit to his good taste. Lucy Walbridge was by far the sweetest girl in Dashford. She was about twenty-five years of age—an orphan and an heiress, and resided with her uncle, Squire Hillman, at the Hall. And Squire Hillman's wife was obligingly taken sick of a slow fever, which gave the Doctor an excellent excuse for tying his roan horse, every day, to the great elm in front of the Squire's.

We are not writing a love story, so we will pass over the courtship. For once the course of true love seemed to run smooth. There were no obstacles to surmount—both parties were of an age to marry—and there were no friends to raise objections.

It was in July that Dr. Wylie came to Dashford, and his wedding day was set for the 15th of March.

It came all too soon, Lucy thought, for surely nothing could be more delightful than the charmed life they were leading. She almost feared marriage might break the sweet enchantment.

The day was clear and cloudless, altogether unlike the days March usually gives us, and in the morning the first bluebird sang gaily in the old elm, which reached its branches almost in at Lucy's window. Dr. Wylie made all his business calls—for the sick must be attended to—and on his way to his hotel, he stopped at the Hall, in defiance of all etiquette, to kiss Lucy and bid her keep up her courage. He ate his supper with Mrs. Stark at six—and then went to his room to dress. The ceremony was to take

tives in New York, who were at once written to.

As is usual in such cases, public indignation ran very high. Every one was anxious to convict the real assassin, that the vengeance might be swift and sure. Dr. Wylie's brother offered a reward of five hundred dollars for the discovery and apprehension of the murderer; and Dashford, not to be behind in the good work, offered a like amount.

The offered rewards brought forth their fruit. Isaac Smith, a laborer, employed at intervals about the Red Mug, came before a justice and stated that on the evening of the murder, about six o'clock, he had met Clyde Irving—a young mechanic—coming in great haste from the direction of the garden at the Red Mug. He had bidden him good evening, a salutation which was briefly responded to. Irving had appeared to be powerfully agitated from some cause, and anxious to escape. The next morning, feeling curious, with the rest, about the murder and everything connected with it, Mr. Smith had been over the garden, and on looking beneath the hemlock which covered the sage bed, he had found a small, exceeding sharp chisel, bearing on the handle the name of Clyde Irving. The instrument was rusty and stained with blood as he exhibited it to the justice—and the finding of this weapon recalled the fact that, at the *post mortem* examination, the surgeon had expressed it as his opinion that the fatal wound had not been made by a knife, but by some other sharp pointed instrument.

Even as she spoke her lips grew purple—she trembled and fell forward; and before they reached her she was lifeless. An examination after death proved that she had swallowed strichine—and they buried her and her sins together in the village churchyard.

Two years afterward, Clyde Irving married Lucy Walbridge.

A "stunning" Love Letter.  
The following is sublimely "splendiferous," and we recommend it as a model to letter writers:

MY DEAR Miss C.—Every time I think

of you my heart flops up and down like a

churn dasher. Sensations of unutterable joy

creep over it like young goats over a stable

roof, and thrill through it like Spanish needles

through a pair of tow linen trowsers.

As a gosling swims with delight in a mud-

puddle, so swim I in a sea of glory. Visi-

tions of ecstatic rapture, thicker than the

hairs in a blacking brush, and brighter than

the bus of the humming bird's visions, visit

me in my slumbers, and borne on their visi-

ble wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-

held your angelic perfections, I was bewil-

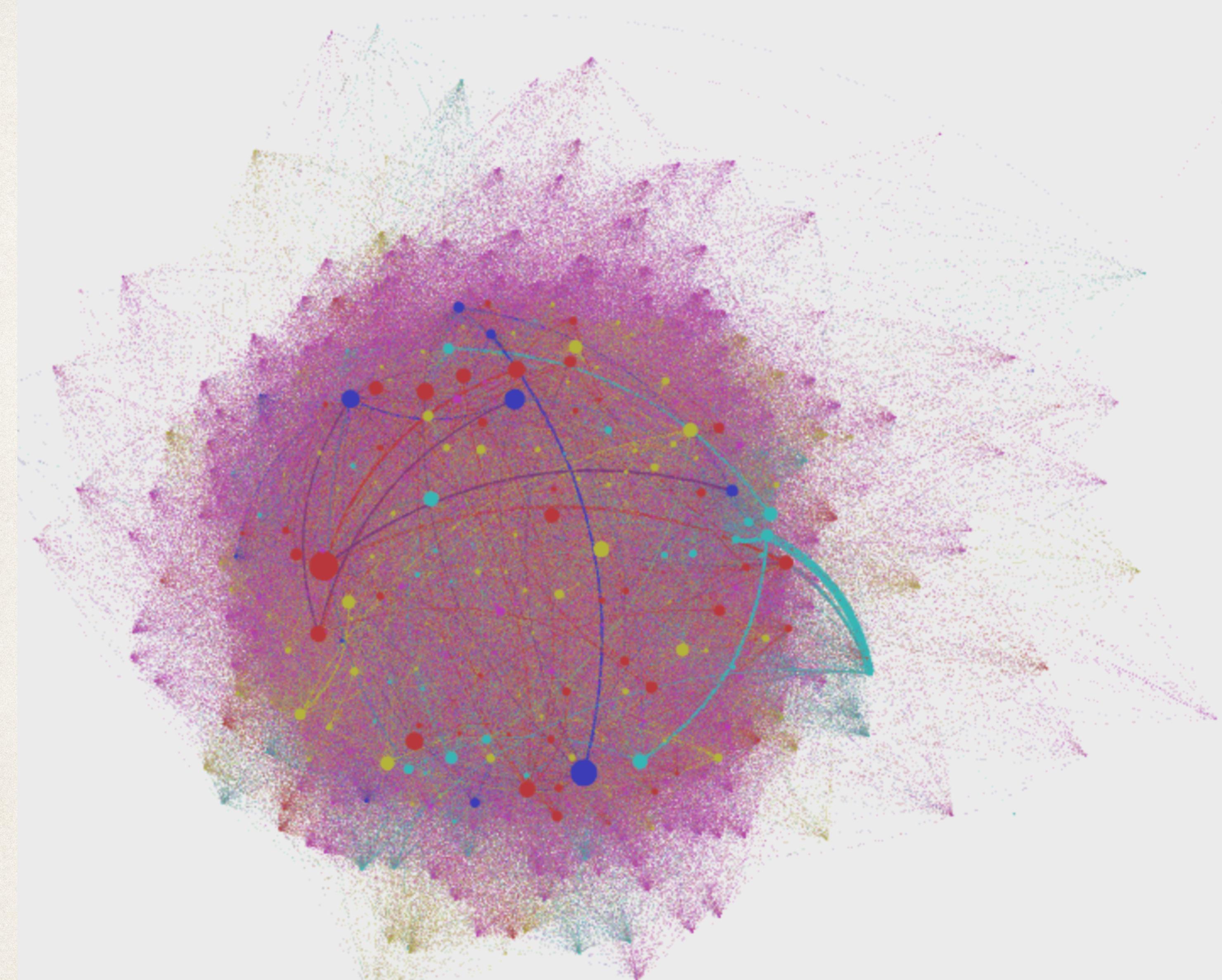
dered, and my brain whirled about like a

bumble bee under a glass tumbler. My

wings, your image stands before me, and

I reach out to grasp it, like a pointer snap-

ping at a blue bottle fly. When I first be-



Allows the construction of a newspaper network and identify items that became viral in the 19th century

# IN CLASS

---

- String2String: <https://github.com/stanfordnlp/string2string>
- String2string demo