



TEXT SUMMARIZATION STRATEGIES



FINAL PROJECT

Maria João Silva

Data Analytics Bootcamp | Ironhack | December 2019

Google



Rapportive - Arik Hanson



+ Share



Gmail -



More ▾

1-50 of 25,262



COMPOSE

Inbox (12,992)

Important

Sent Mail

Drafts (111)

- Circles

○ Friends (11)

○ Family

○ Acquaintanc...

○ Following

○ BlogWorld



Search people...

● Aaron Landry

● Adam Ostrow

● Amy Mengel

● Chuck Hemann

● David Teicher

■ Grant Spanier

● Jason DeBoer...

● Jesse Stremcha

● Kendall Bird

● Tara Cegla

Gartner BI Magic Quadrant See Where BI is Going in 2013. - QlikView.com/Magic_Quadrant - Don't Make A Move Without It!

Why this ad?

<input type="checkbox"/>			Google Alerts	Google Alert - open streets minnesota - News 1 new result for open streets minnesota Open Streets Buffalo KSTP.co	3:50 pm
<input type="checkbox"/>			Spotify	This Week's New Music - See what's new on Spotify View in your browser Spotify They came, they saw, they rocked!	3:37 pm
<input type="checkbox"/>			FAVES + CO.	[New post] Reddit promotes "Restore Your Rights Rally" on July 4th - Sarah posted: "Reddit is the one of the main :	3:33 pm
<input type="checkbox"/>			Rick Kupchella	The Afternoon News - To view this email as a web page, go here. Email not displaying correctly? View it in your brows	3:31 pm
<input type="checkbox"/>			SuddenBlitz Alert	57% OFF! \$16 for a 8 pack of Mach 3 Turbo Refill Blades with Free shipping a (\$36.99 Va... - Please add campaigns	2:40 pm
<input type="checkbox"/>			Laura Kaslow via LinkedIn	RE: Opportunity with Allina? - Laura Kaslow Communications expert with a focus in public relations Hi Arik, Thanks fo	2:25 pm
<input type="checkbox"/>			Julie, me (2)	talk today? - Sure—what's your number again? Or, you can call me at 612.875.2979. Also: Email me at arik@	2:24 pm
<input type="checkbox"/>			PR Daily Extra	Writing tips for the Web - PR Daily News Feed 13 writing tips for the Web Writing & Editing 13 writing tips for the Web ,	1:56 pm
<input type="checkbox"/>			Social Media Insider Sum.	Where new business begins and genuine friendships are born (Social Media Insider Summit... - Social Media Insid	1:51 pm
<input type="checkbox"/>			FAVES + CO.	[New post] Don't let technology take the place of face-to-face interactions in your fam... - Sarah posted: "It was rec	1:42 pm
<input type="checkbox"/>			Sarah Tobin (5)	Join my network on LinkedIn - LinkedIn Logo Arik, Sarah Tobin wants to connect with you on LinkedIn. 10 shared con	1:28 pm
<input type="checkbox"/>			AirTran Airways Net Esca.	Get Your Beach On - Mexico & the Caribbean on sale! - Deals on flights for travel 8/20 - 12/18/13, car rentals, hotels,	1:11 pm
<input type="checkbox"/>			iTunes Store	Your receipt No.126056066605 - Billed To: arik.hanson@gmail.com Arik Hanson 5336 11th Ave S Minneapolis, MN 5	1:10 pm
<input type="checkbox"/>			FAVES + CO.	[New post] Apply to speak at TED@NYC talent search - Sarah posted: "In 2014 TED will celebrate their 30th anniver	1:00 pm
<input type="checkbox"/>			PR Daily	5 reasons reporters hate your pitches (and how to solve them!) - They're too long! The quotes are not "human." They sc	12:34 pm
<input type="checkbox"/>			Larsmont Cottages	E-Break From Lake Superior - Reserve Your Stay A friend told me about a cow moose with twin calves that have bee	11:59 am
<input type="checkbox"/>			Newsle	News about Keith Trivitt, John Bernier, Chris Heuer, Cory Treffiletti, Dan Jasper... - Know your network. Your Linke	11:58 am
<input type="checkbox"/>			HARO	[HARO] Tuesday Afternoon Queries "Facebook Cheat Sheet" Edition - Content marketing requires creativity. But yo	11:43 am
<input type="checkbox"/>			Convince and Convert	Winning the Marketing Battle Between Help and Hype - One Thing :: The News You Need and Nothing Else View this	11:43 am
<input type="checkbox"/>			Foursquare	Joram Manka wants to be your friend on Foursquare! - Hi Arik, Just a heads-up — Joram Manka wants to be your fri	11:34 am



1

Word Frequency Analysis

2

Machine Learning Model

3

Evaluating Results



President Donald Trump's new trade deal with China will further integrate the world's two largest economies if Beijing honors its commitments in areas ranging from intellectual property protection to agriculture, U.S. Trade Representative Robert Lighthizer said Sunday.

"Ultimately, whether this whole agreement works is going to be determined by who's making the decisions in China, not in the United States," Lighthizer said on CBS News' "Face the Nation."

"If the hardliners are making the decisions, we're going to get one outcome. If the reformers are making the decisions, which is what we hope, then we're going to get another outcome."

The "phase one" trade deal announced Friday cancels additional duties that were scheduled to go into effect Sunday, reduces duties on about \$120 billion of Chinese goods to 7.5 percent, from 15 percent previously, and leaves a 25 percent duty in place on another \$250 billion worth of Chinese goods.

China, in addition to making promises to better protect U.S. intellectual property, has pledged to buy another \$200 billion worth of goods and services from the United States over the next two years, including about \$40 billion to \$50 billion worth of agricultural products each year.

"You could think of it as \$80 to \$100 billion in new sales for agriculture over the course of the next two years. Just massive numbers," Lighthizer said.

That has prompted questions about whether U.S. farmers can actually accommodate the increased demand, without siphoning sales away from other export markets they already have.

For much of the last two years, there has been a debate about whether Trump's true aim by imposing tariffs on hundreds of billions of dollars of Chinese good was to separate, or "decouple," the U.S. economy from China, rather reach an actual trade agreement.

On Sunday, Lighthizer indicated the objective was to tie the two economies closer together. "The way to think about this deal, is this is a first step in trying to integrate two very different systems to the benefit of both of us," the trade chief said.

The Trump administration also got another trade win last week when House Democrats and the AFL-CIO endorsed a newly revised North American trade agreement with Mexico and Canada, after changes were made to toughen labor enforcement provisions and weaken intellectual property protections for life-saving biologic medicine.

Some of the tweaks made to shore up Democratic support have annoyed Republicans, who have different views of both issues.

But that's not expected to block congressional approval. The House is expected to vote on the bill this week and the Senate to follow suit in early 2020, after it finishes Trump's impeachment trial. Lighthizer conceded weakening the biologics provision made the trade deal worse on that point. But he said the overall package was "better" as a result of the changes demanded by Democrats.

"There's nothing about being against labor enforcement that's Republican," Lighthizer said. "The president wants Mexico to enforce its labor laws. He doesn't want American manufacturing workers to have to compete with people who are in very difficult conditions."



President Donald Trump's new trade deal with China will further integrate the world's two largest economies if Beijing honors its commitments in areas ranging from intellectual property protection to agriculture, U.S. Trade Representative Robert Lighthizer said Sunday.

"Ultimately, whether this whole agreement works is going to be determined by who's making the decisions in China and the United States," Lighthizer said on CBS News' "Face the Nation."

1 "If the reformers are making the decisions, we're going to get one outcome. If the reformers are making the decisions, which I hope, then we're going to get another outcome."

The "Phase One" trade deal announced Friday cancels additional duties that were scheduled to go into effect Sunday, reduces the tariff on about \$120 billion of Chinese goods to 7.5 percent, from 15 percent previously, and leaves a 25 percent duty in place on another \$250 billion worth of Chinese goods.

China, in addition to making promises to better protect U.S. intellectual property, has pledged to buy another \$200 billion worth of goods and services from the United States over the next two years, including about \$40 billion to \$50 billion worth of agricultural products each year.

"You could think of it as \$80 to \$100 billion in new sales for agriculture over the course of the next two years. Just massive numbers," Lighthizer said.

That has prompted questions about whether U.S. farmers can actually accommodate the increased demand, without siphoning sales away from other export markets they already have.

For much of the last two years, there has been a debate about whether Trump's true aim by imposing tariffs on hundreds of billions of dollars of Chinese good was to separate, or "decouple," the U.S. economy from China, rather reach an actual trade agreement.

On Friday, Lighthizer indicated the objective was to tie the two economies closer together. "The way to think about this deal, is the first step in trying to integrate two very different systems to the benefit of both of us," the trade chief said.

2 **The Trump administration also got another trade win last week when House Democrats and the AFL-CIO endorsed a new North American trade agreement with Mexico and Canada, after changes were made to toughen labor enforcement provisions and weaken intellectual property protections for life-saving biologic medicine.**

Some of the tweaks made to shore up Democratic support have annoyed Republicans, who have different views of both issues.

But that's not expected to block congressional approval. The House is expected to vote on the bill this week and the Senate to follow suit in early 2020, after it finishes Trump's impeachment trial. Lighthizer conceded weakening the biologics provision made the trade deal worse on that point. But he said the overall package was "better" as a result of the changes demanded by Democrats.

3 **"Thinking about being against labor enforcement that's Republican," Lighthizer said. "The president wants Mexico to keep its labor laws. He doesn't want American manufacturing workers to have to compete with people who are in difficult conditions."**

WORD FREQUENCY ANALYSIS

President Donald Trump's new trade deal with China will further integrate the world's two largest economies if Beijing honors its commitments in areas ranging from intellectual property protection to agriculture, U. S. Trade Representative Robert Lighthizer said Sunday.

For much of the last two years, there has been a debate about whether Trump's true aim by imposing tariffs on hundreds of billions of dollars of Chinese good was to separate, or "decouple," the U. S. economy from China, rather reach an actual trade agreement.

The Trump administration also got another trade win last week when House Democrats and the AFL-CIO endorsed a newly revised North American trade agreement with Mexico and Canada, after changes were made to toughen labor enforcement provisions and weaken intellectual property protections for life-saving biologic medicine.

China, in addition to making promises to better protect U. S. intellectual property, has pledged to buy another \$200 billion worth of goods and services from the United States over the next two years, including about \$40 billion to \$50 billion worth of agricultural products each year.

"Ultimately, whether this whole agreement works is going to be determined by who's making the decisions in China, not in the United States," Lighthizer said on CBS News' "Face the Nation."

WORD FREQUENCY ANALYSIS

1

President Donald Trump's new trade deal with China will further integrate the world's two largest economies if Beijing meets its commitments in areas ranging from intellectual property protection to agriculture, U. S. Trade Representative Robert Lighthizer said Sunday.

For much of the last two years, there has been a debate about whether Trump's true aim by imposing tariffs on hundreds of billions of dollars of Chinese good was to separate, or "decouple," the U. S. economy from China, rather reach an actual trade agreement.

2

The administration also got another trade win last week when House Democrats and the AFL-CIO endorsed a newly negotiated North American trade agreement with Mexico and Canada, after changes were made to toughen labor enforcement provisions and weaken intellectual property protections for life-saving biologic medicine.

China, in addition to making promises to better protect U. S. intellectual property, has pledged to buy another \$200 billion worth of goods and services from the United States over the next two years, including about \$40 billion to \$50 billion worth of agricultural products each year.

1

"Ultimately, whether this whole agreement works is going to be determined by who's making the decisions in China, not in the United States," Lighthizer said on CBS News' "Face the Nation."

MACHINE LEARNING MODEL

President Donald Trump's new trade deal with China will further integrate the world's two largest economies if Beijing honors its commitments in areas ranging from intellectual property protection to agriculture, U.S. Trade Representative Robert Lighthizer said Sunday.

If the reformers are making the decisions, which is what we hope, then we're going to get another outcome."

"The president wants Mexico to enforce its labor laws.

Some of the tweaks made to shore up Democratic support have annoyed Republicans, who have different views of both issues. "There's nothing about being against labor enforcement that's Republican," Lighthizer said.

MACHINE LEARNING MODEL

1

President Donald Trump's new trade deal with China will further integrate the world's two largest economies if Beijing honors its commitments on issues ranging from intellectual property protection to agriculture, U.S. Trade Representative Robert Lighthizer said Sunday.

If the U.S. is making the decisions, which is what we hope, then we're going to get another outcome."

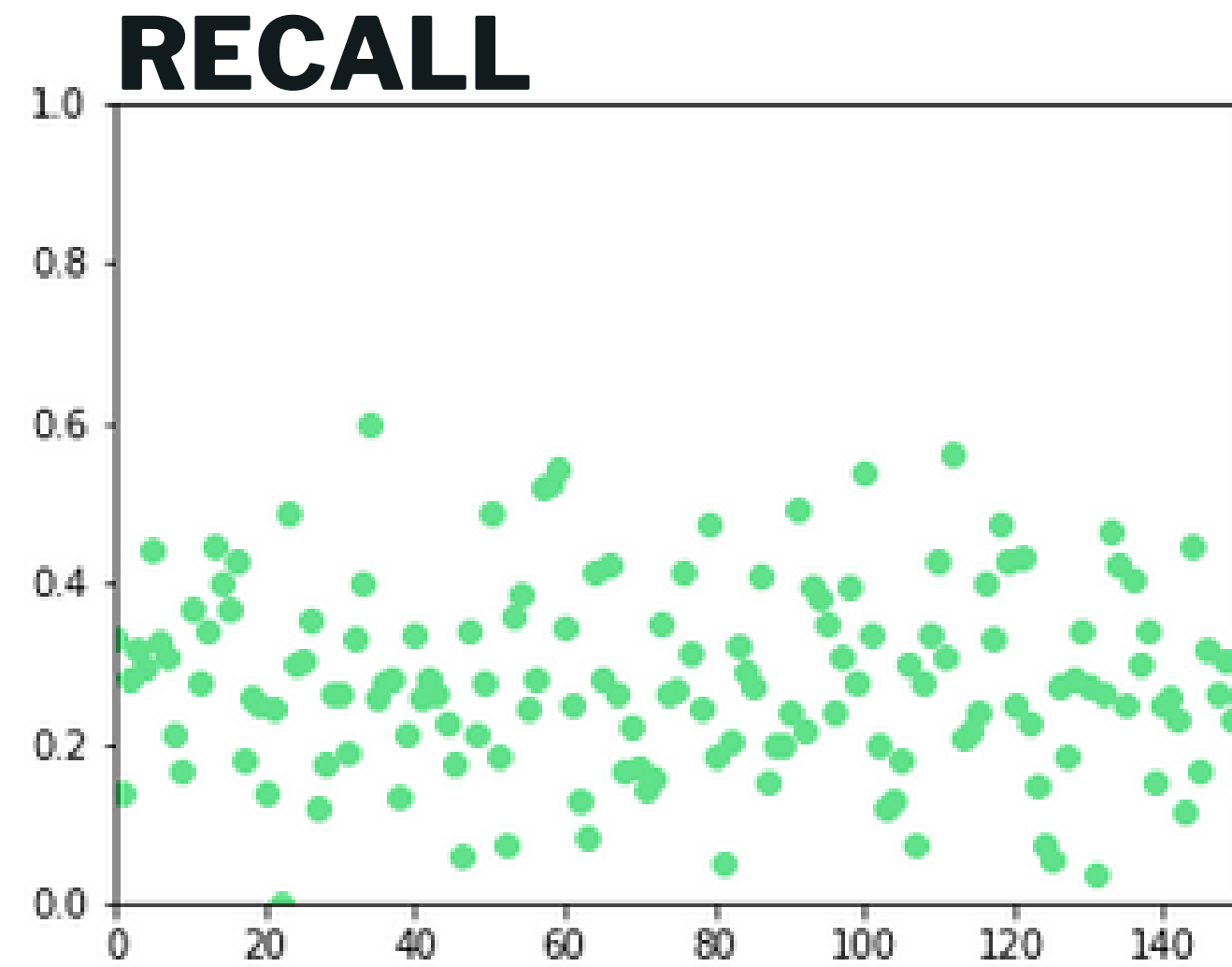
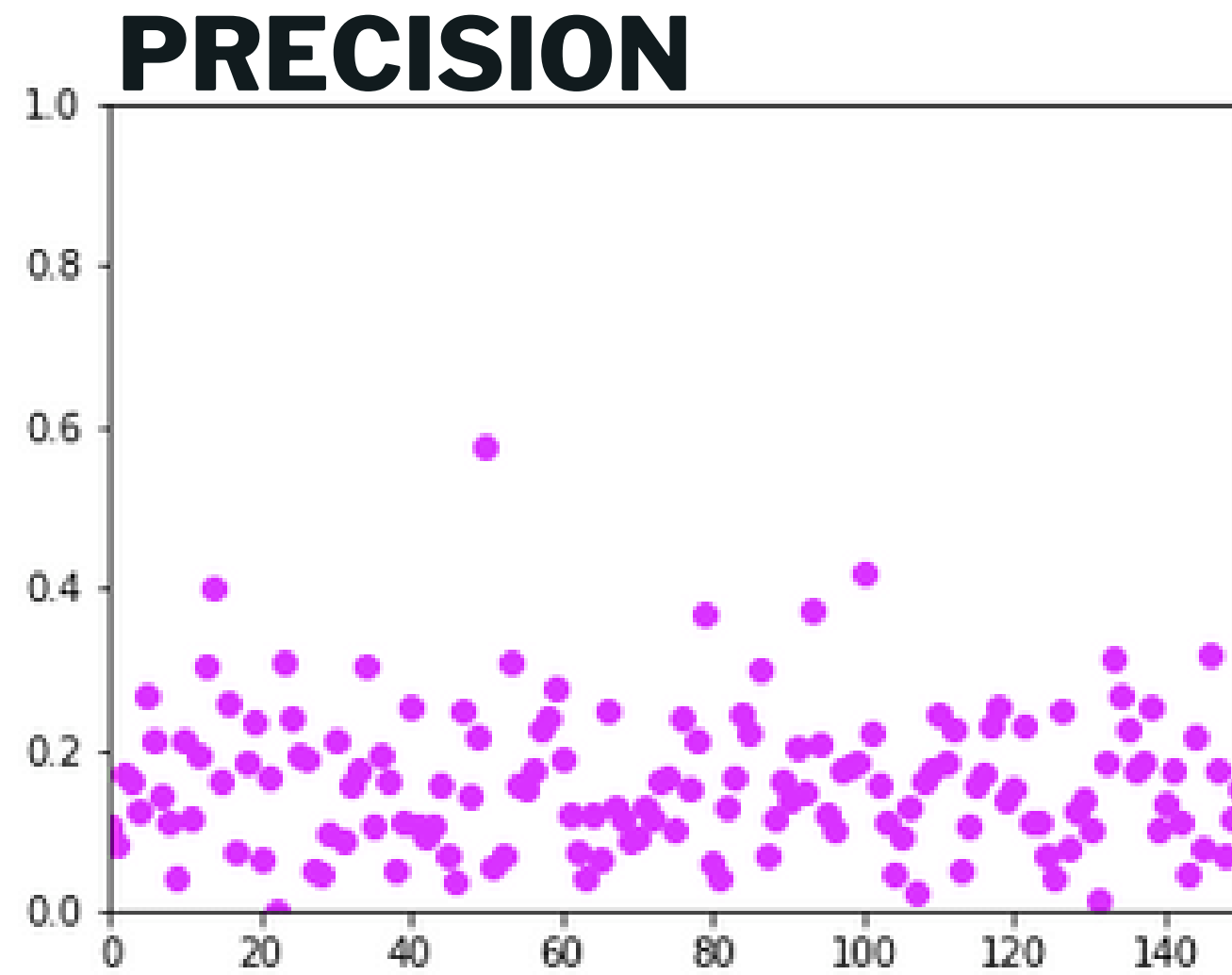
"Trump wants Mexico to enforce its labor laws.

Some of the moves made to shore up Democratic support have annoyed Republicans, who have different views of both issues. "There's nothing about being against labor enforcement that's Republican," Lighthizer said.

3

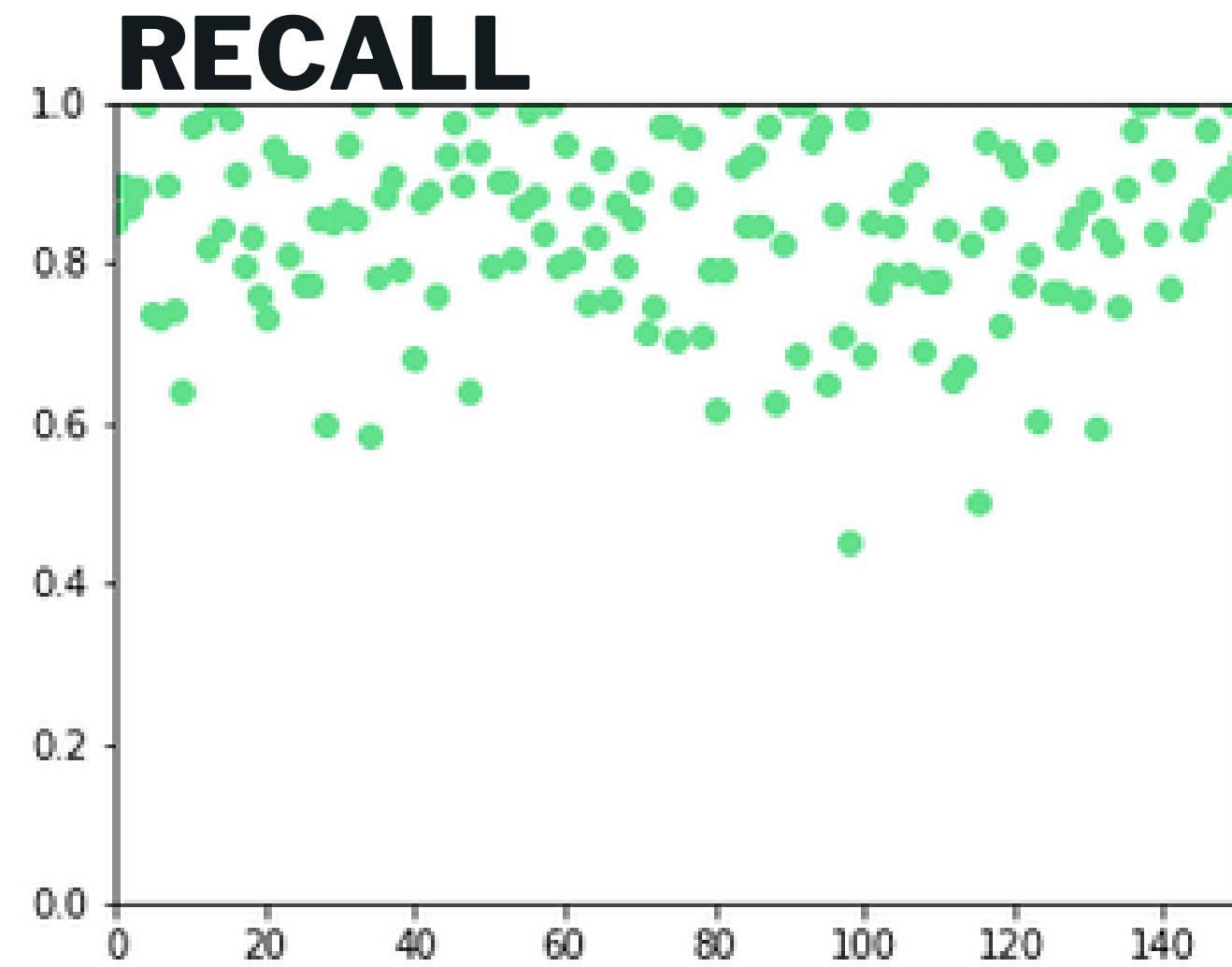
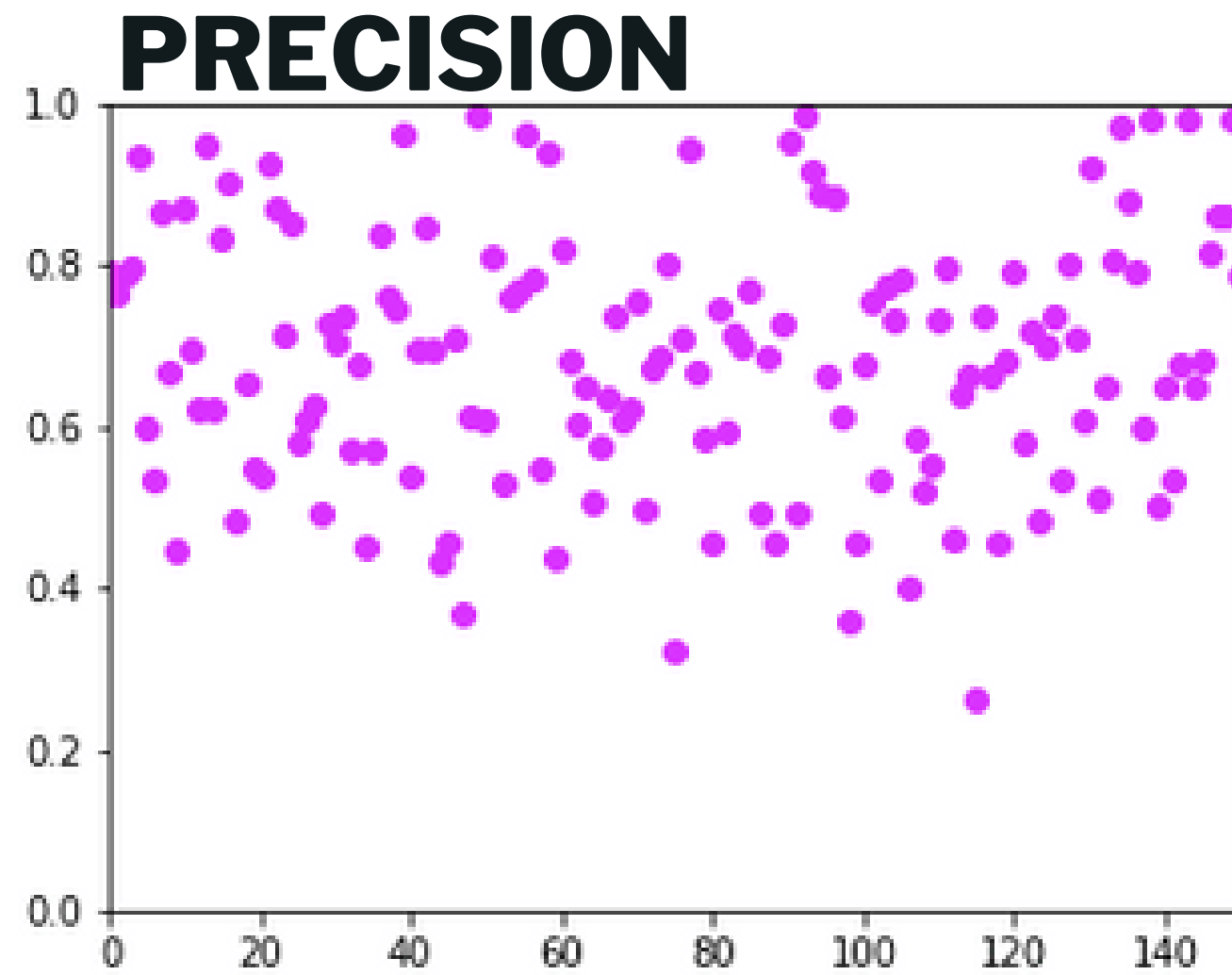
WORD FREQUENCY ANALYSIS

CONFERENCE PAPERS

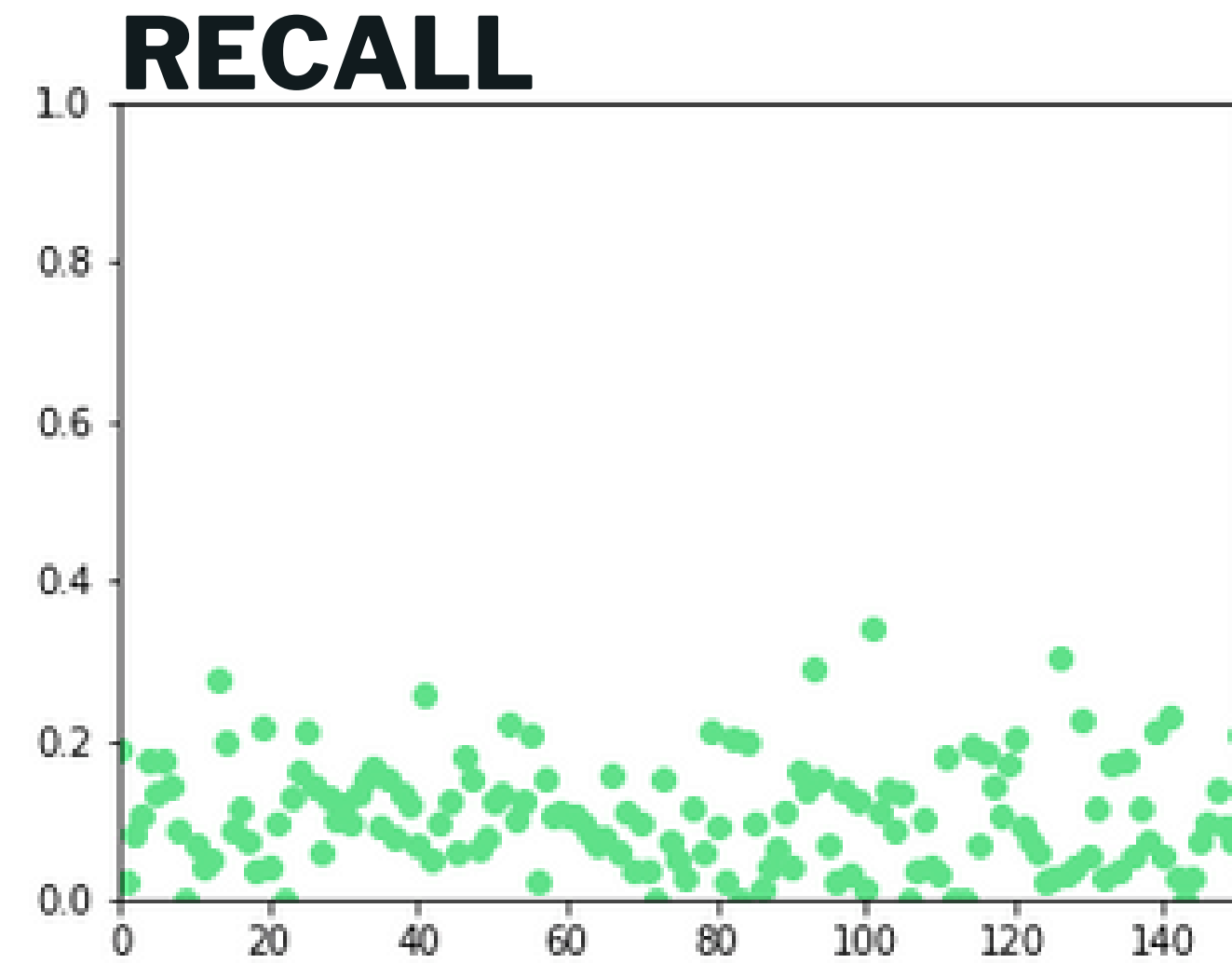
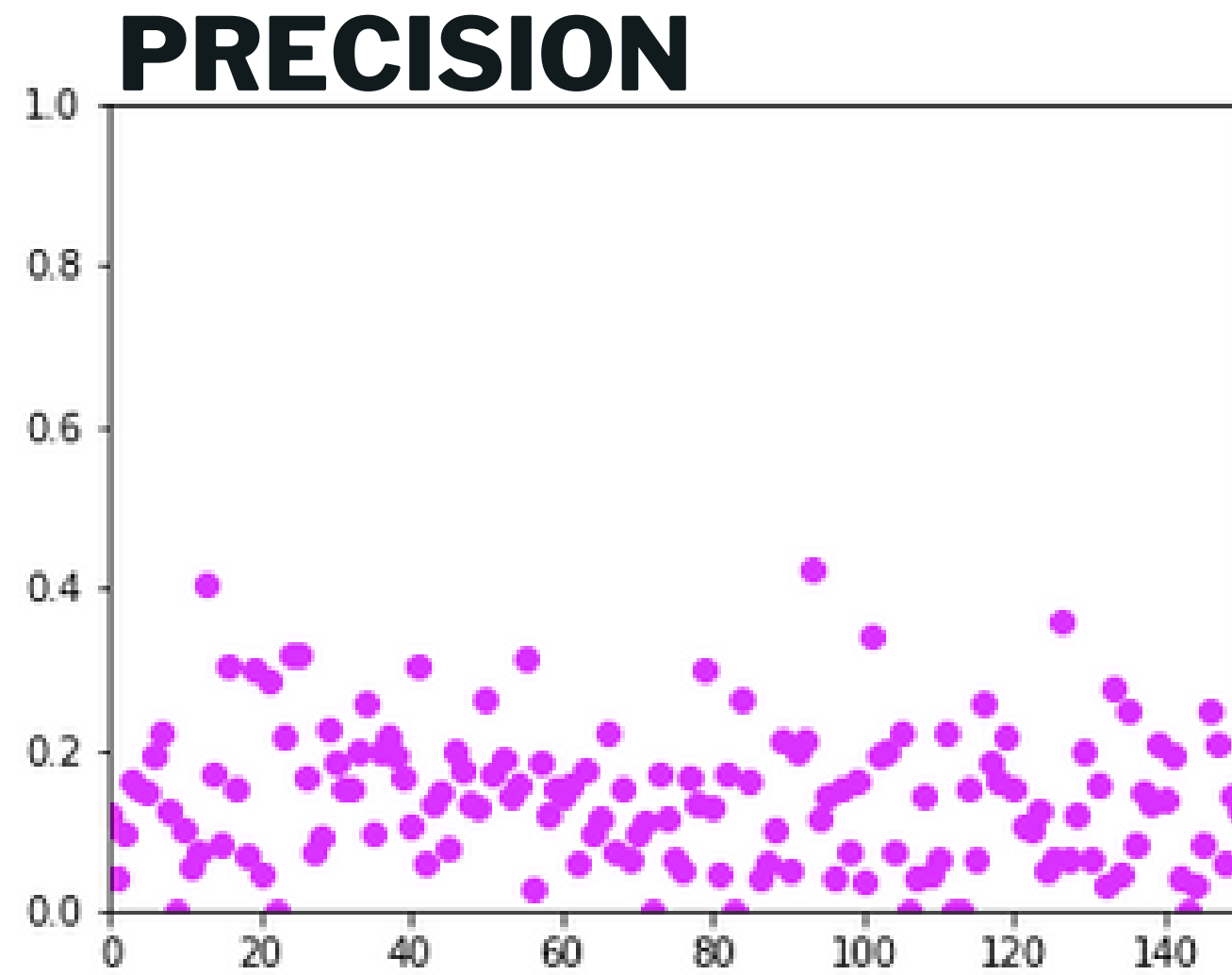


WORD FREQUENCY ANALYSIS

NEWSPAPER ARTICLES

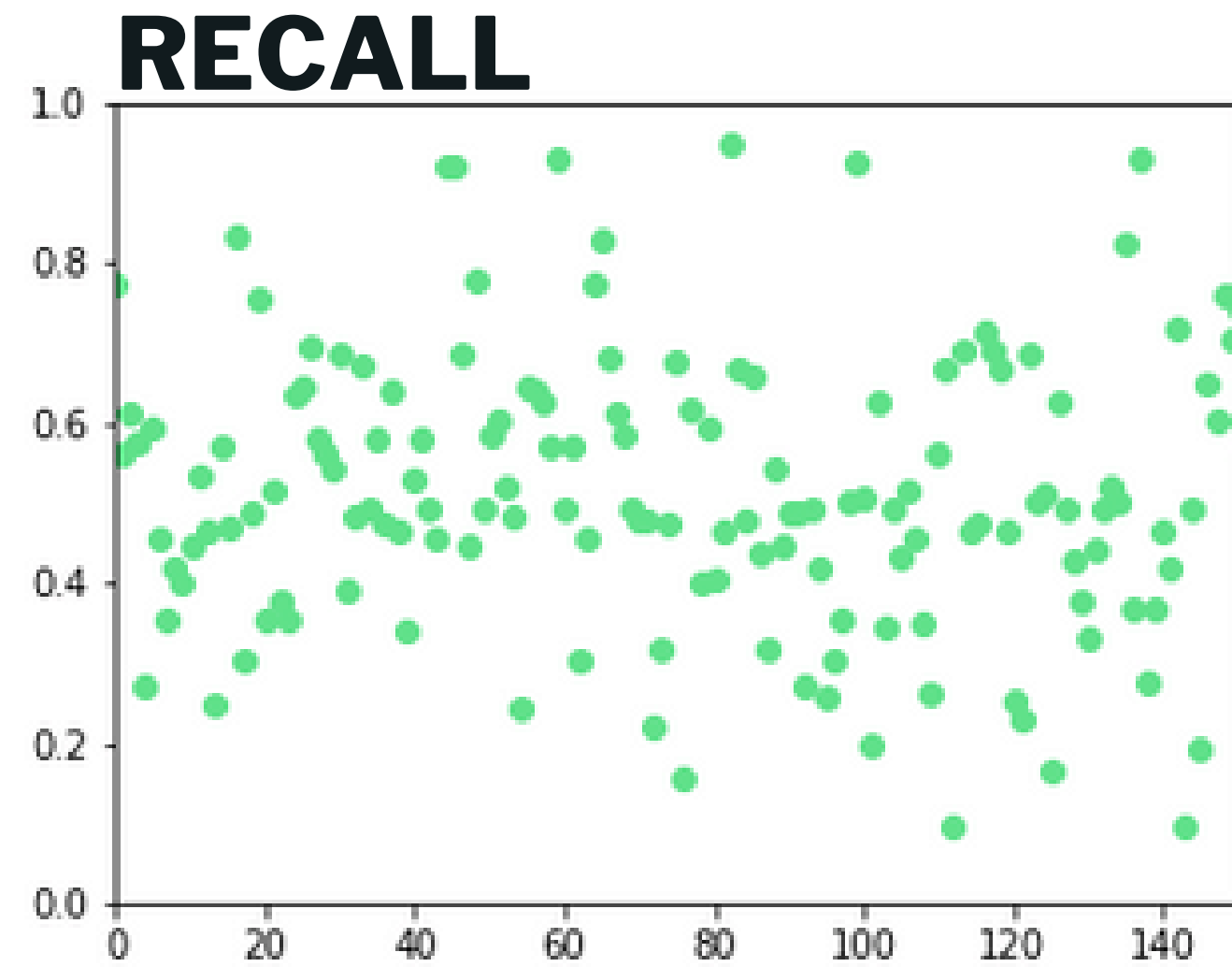
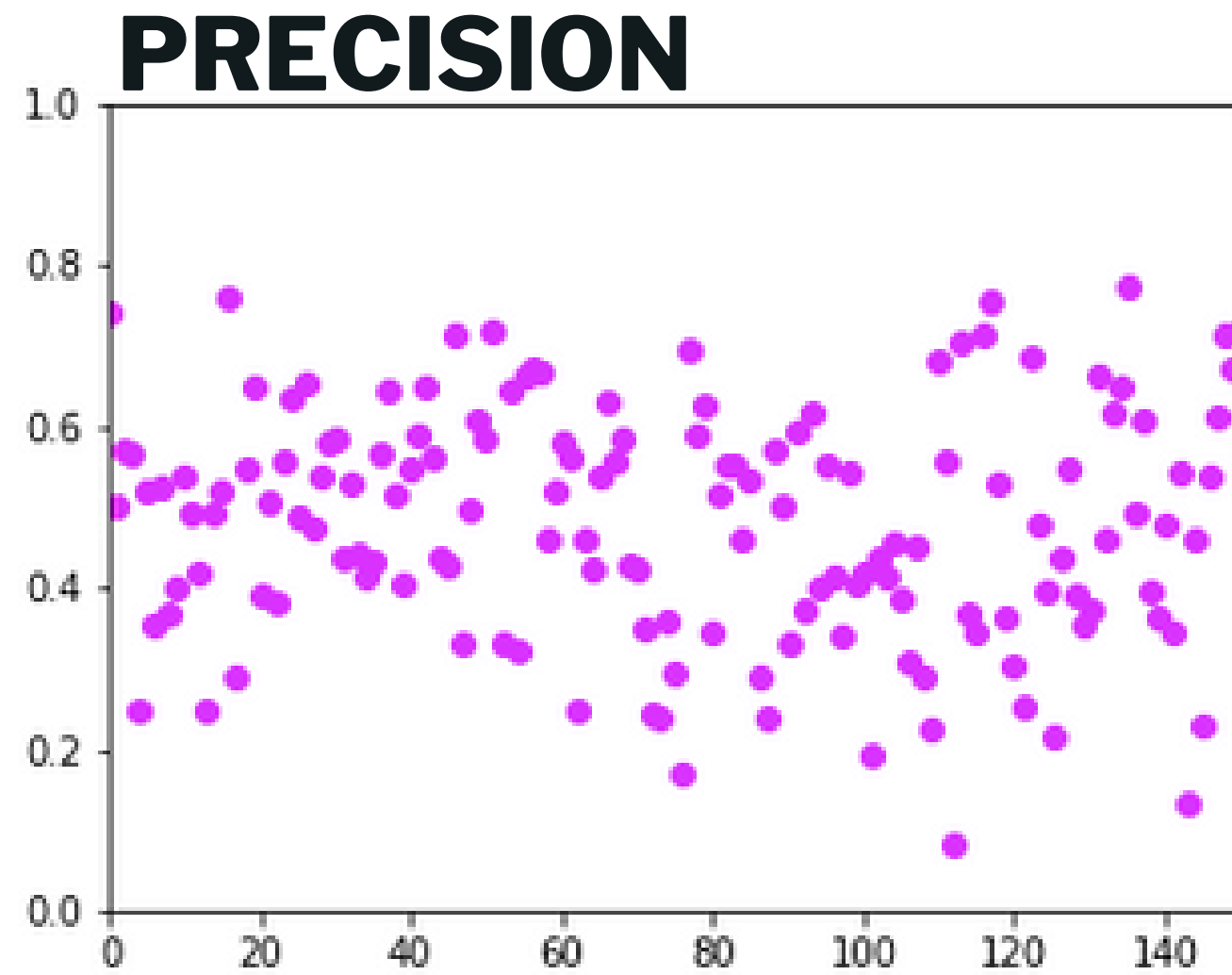


MACHINE LEARNING MODEL CONFERENCE PAPERS



MACHINE LEARNING MODEL

NEWSPAPER ARTICLES



CONCLUSIONS

W. F. Analysis

Pros

- Faster
- Computational resources
- General domain texts

Cons

- Text coherence
- Dictionaries

M. L. Model

Pros

- Text coherence
- No dictionaries
- General domain texts

Cons

- Computational resources
- Training corpora



QUESTIONS?