

Analyzing Narrative Evolution about South China Sea Dispute

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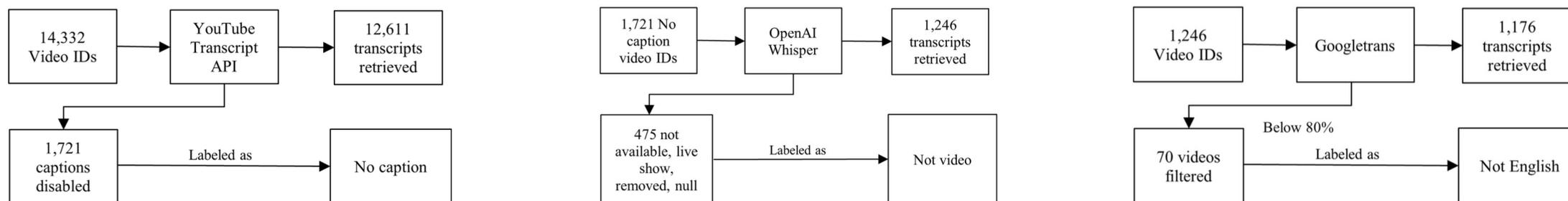
- Introduction
- Data Collection
- Narrative Extraction Methodology
- Results and Findings
- Conclusion and Future Directions

- YouTube as a major information source: 1B hours watched daily; used by ~70% of Americans.
- Misinformation challenge: Video platforms enable propaganda and competing narratives.
- Methodological gap: Prior studies focus on metadata, missing narrative-level insights.
- AI-driven narrative analysis: Uses GPT-5 to extract narratives from YouTube video content.
- Key finding: Fivefold rise in anti-Western misinformation narratives in 2022, linked to broader global events.

- Indo-Pacific dataset comprising YouTube videos
 - narratives about security and the Chinese People’s Liberation Army navy in the Philippines.
 - China+ PLA/Navy/soldiers + "South China Sea"/"West Philippine Sea"/SCS/WPS + (presence + friction/concern/worry/alarm/issue/conflict/violate/encroach) + "artificial islands"
 - narratives regarding security and Philippines Navy maritime defenses against China.
 - Philippine/Manila + navy + (ramp/expand/buy/warship/"dream fleet"/defenses/combat/capabilities/modern/Hyundai/"South Korea"/asset/deter/"Anti-access, area-denial"/A2D2)
 - security and the Chinese Coast Guard narratives.
 - Leni/Robredo/"Isko Moreno" + Protect/support/back/ally + fishermen
 - security and PH coast guard narratives, regarding the South China Sea and maritime territories.
 - China+Philippine/Manila/"coast guard" + "do not"/avoid/refrain/avert/confront
 - security and U.S. interference narratives.
 - USA/America/"United States"/U.S./"Indo-Pacific"/"Uncle Sam"/NATO + "South China Sea"/SCS/WPS/"West Philippine Sea" + ("wolf in sheep's clothing"/bully/wary/instigate/conflict/panic/fear/drills/exercises/military/ambitions/disrupt/interfere/involve/leave/power/nuclear)
 - South China Sea narratives related to China's maritime militia and foreign policies in terms of security.
 - South China Sea/SCS/"West Philippine Sea"/WPS + China/Philippine + militia + (fake/"identification cards"/"military ID"/scam/"hidden navy") + ("big power"/"mammoth force"/Russia/China/nuclear/superpower/NATO/West/EU/Moscow/Soviet/"Uncle Sam"/"Uncle Xi"/specul)

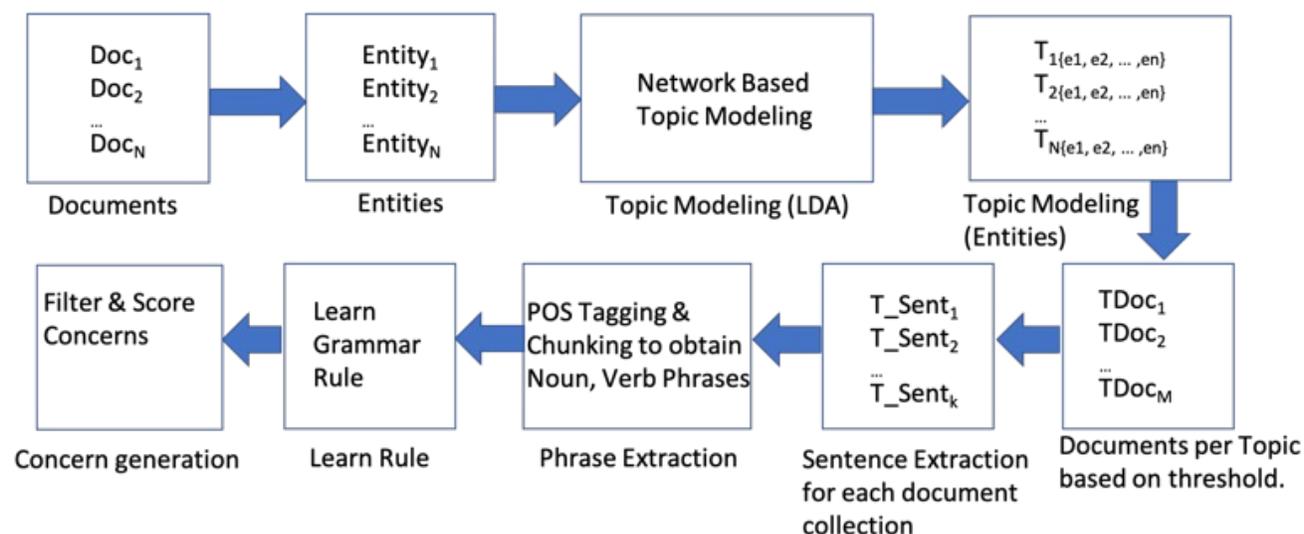
‘+’ is AND and ‘/’ is OR

- 14,332 videos from YouTube were collected.
- Transcript generation module
 - Combination of YouTube API and OpenAI/Whisper model in a parallel computing environment (Cakmak & Agarwal, 2023)
 - Transcripts generated for 13,787 videos



Cakmak and Agarwal (2023). Adopting Parallel Processing for Rapid Generation of Transcripts in Multimedia-rich Online Information Environment. 37th IEEE International Parallel & Distributed Processing Symposium (IPDPS), Parallel and Distributed Processing for Computational Social Systems (ParSocial) track, May 15- 19 2023, St. Petersburg, Florida, USA.

- Our narrative extraction approach builds on prior algorithms for narrative extraction developed by us (Agarwal, 2025; Rubaye et al., 2022; Hussain et al., 2021; Marcoux and Agarwal, 2021; Bandeli et al., 2020).
- Due to its rigorous theoretical grounding, the proposed approach is **explainable, computable, objective, and scalable**.



- **Native attributes**
 - Video title
 - Description
 - Transcript
 - Published time
 - Video ID/URL
 - Channel ID/URL
 - Duration
 - Category
- **Computed attributes**
 - Title sentiment
 - Title toxicity
 - Description sentiment
 - Description toxicity
 - Transcript sentiment
 - Transcript toxicity
 - Topic distribution
 - Narratives

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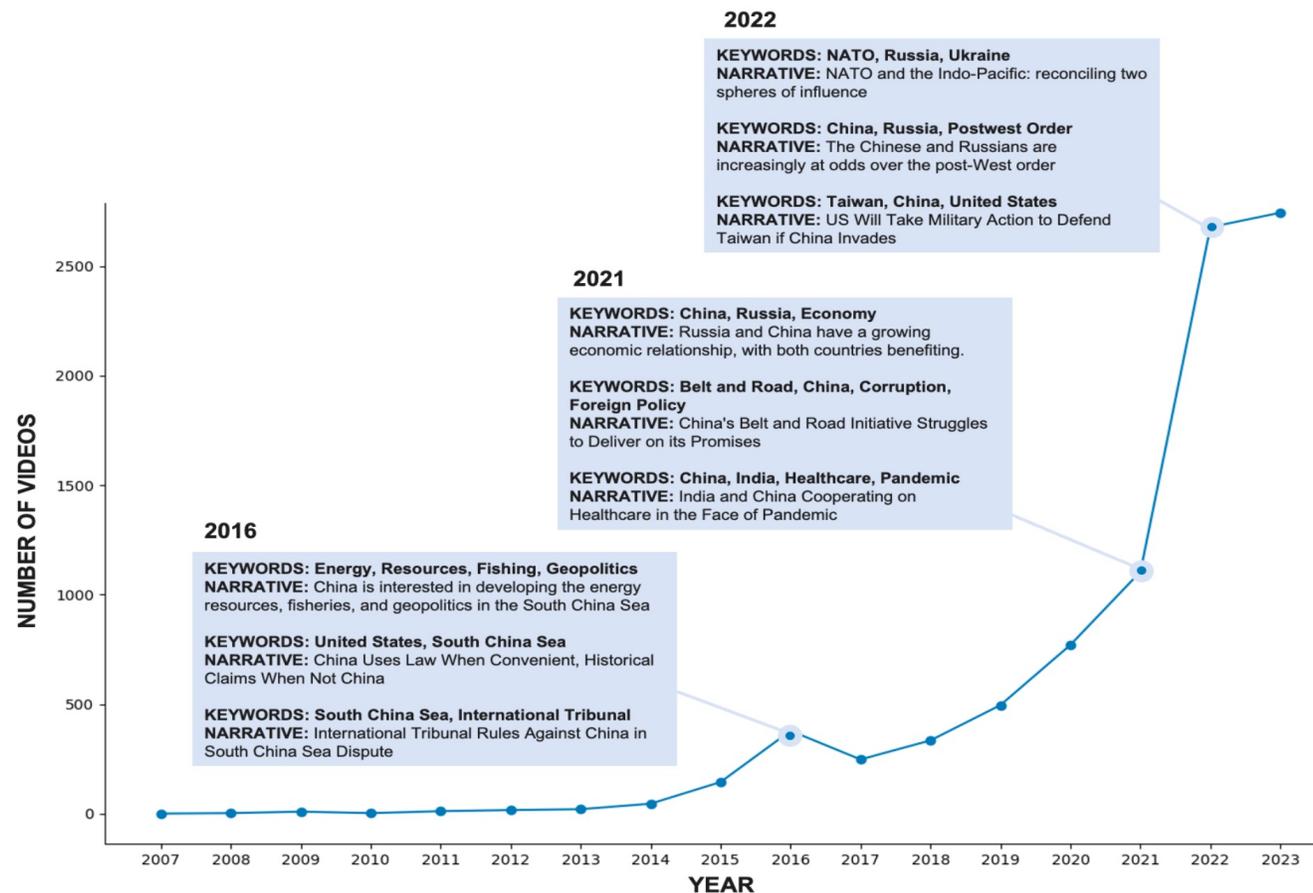
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218     "description": "Over the past two decades, China has built large infrastructure projects in alm
* for exclusive perks: http://www.youtube.com/bloomberg/join\n\nSubscribe to Quicktake Explained: h
* it: exclusive interviews, fascinating profiles, data-driven analysis, and the latest in tech in
* "channel_id": "UCUMZ7gohGI9HcU9VNsR2FJQ",
219     "crawled_time": "2022-09-14T02:20:39",
220     "source_id": null,
221     "modified_to_db_time": "2023-02-18T19:19:05",
222     "transcript": "In the past two decades China has built large infrastructure projects in almost
* poorer countries intentionally overwhelming them with unsustainable debt forcing them to surren
* that Chinese investments and Chinese infrastructure projects have been linked to increasing Chi
* aid and charity we want to do trade we want to be treated like partners The Chinese came along
* time again said Be careful of the flowers you see out of the window they have thorns on them In
* from infrastructure in the 60s and 70s Its something that we did very very well for a long time
* began building the Tazara Railway a link between the Zambian town of Kapiri Mposhi and Dar es S
* define the divide between the West and the East as far as Chinas involvement in Africa is conce
* deliver fast and cheap And in that sense it was really an ideal match They recognized what Afri
* currently involved in an estimated 35 African countries and has made significant contributions
* historically with low interest rates and flexible terms There must be over millions of differen
* with higher interest rates in line with what you would get from a typical private bank One of t
* not really comparing like for like And the fact of the matter is this and I hope the borrowers
* revealed that the loans are structured to give an advantage over other creditors and allows act
* other hand when you come to commercial banks then youll see a very different case And that is b
* projects off the ground to put them into action and to begin construction critical due diligenc
* pound of flesh in Uganda In 2021 the Entebbe International Airport in Uganda came under fire af
* corrupt to look after its own interest I think in my personal view and experience that just sim
* dont read this just sign on the dotted line In fact they will spend days and days and theyre si
* developing countries into debt and become further beholden to Beijing In Kenya and Nigeria debt
* West has not got an alternative program So therefore China is the only game in town and the ter
* a default by the Nigerian government But looking closer at Kenya and Nigerias total public debt
* by the Chinese One country cannot control another country just by owning 410 of its debt Only a

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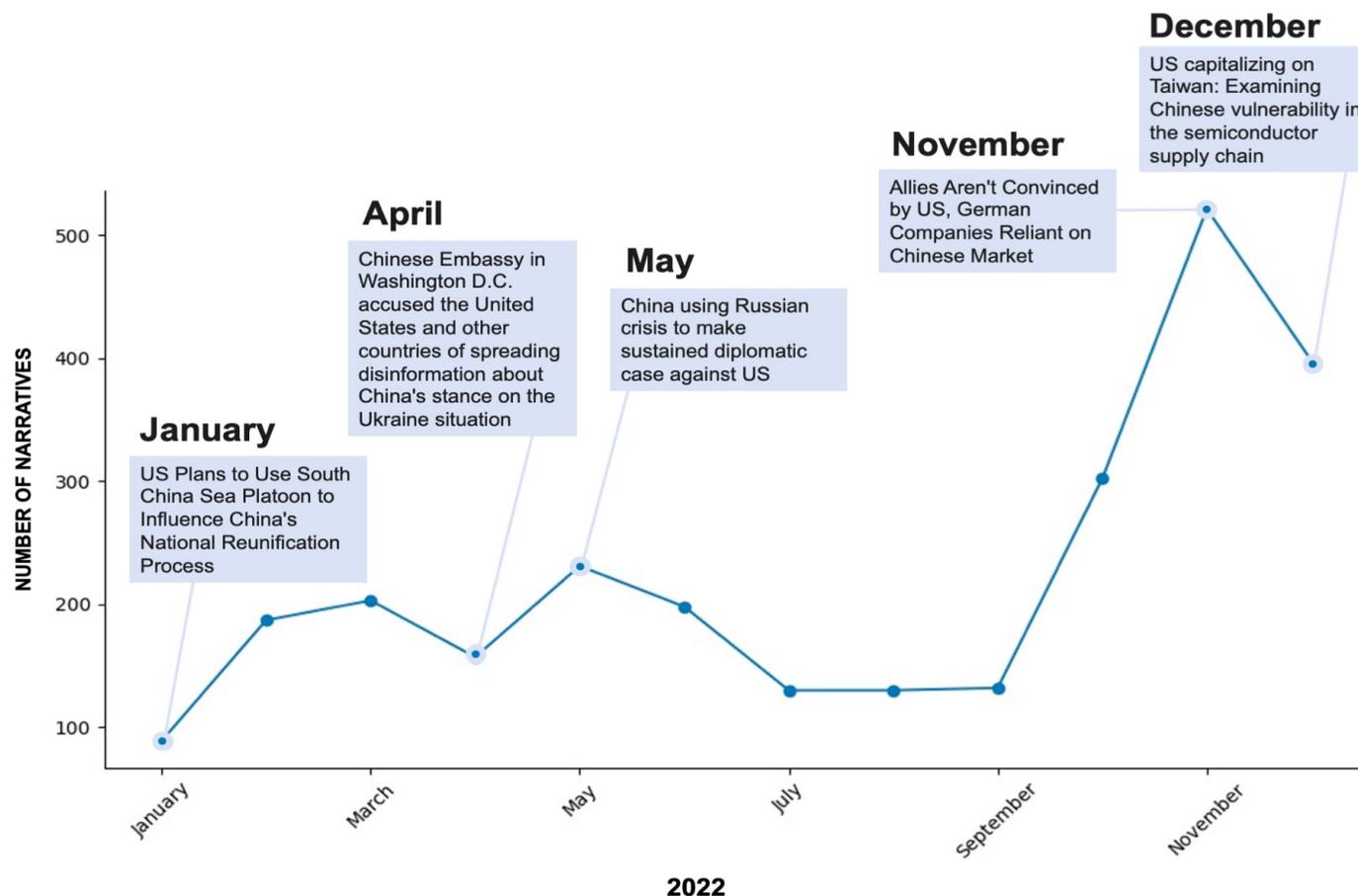
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242       0
243     ],
244     "tfidf_narrative": [
245       "Chinas lending practices is known as debttrap diplomacy a phrase made popular.",
246       "construction critical due diligence was often left by the wayside financial sustainability s
247       "social services China has been building African governments.",
248       "the former colonial governments are not plowing in lots of money Enter China As.",
249       "Africa made a lot of sense.",
250       "the rush to get projects off the ground.",
251       "private bond markets Africa does not have a Chinese debt problem Angola weights about a thir
252       "two decades China has built large infrastructure projects.",
253       "own infrastructure initiatives to counter China.",
254       "Africa is concerned In the early.",
255       "This is because by the time.",
256       "these projects overall for Africa How.",
257       "work to offer alternatives The EUs Global Gateway.",
258       "the China Exim Bank to fund Nigerias.",
259       "much China is investing across the world this.",
260       "elites to side with China on critical issues.",
261       "Chinese entities including the multibillion dollar mining project to the family.",
262       "the African continent have a significant amount of debt owed to China.",
263       "loans involving Chinese lenders.",
264       "African experts are skeptical At the end.",
265       "China finances projects.",
266       "this has made Western critics uncomfortable China.",
267       "China much needed political allies Beijing.",
268       "SubSaharan Africa allowing Zambia to ship copper bypassing.",

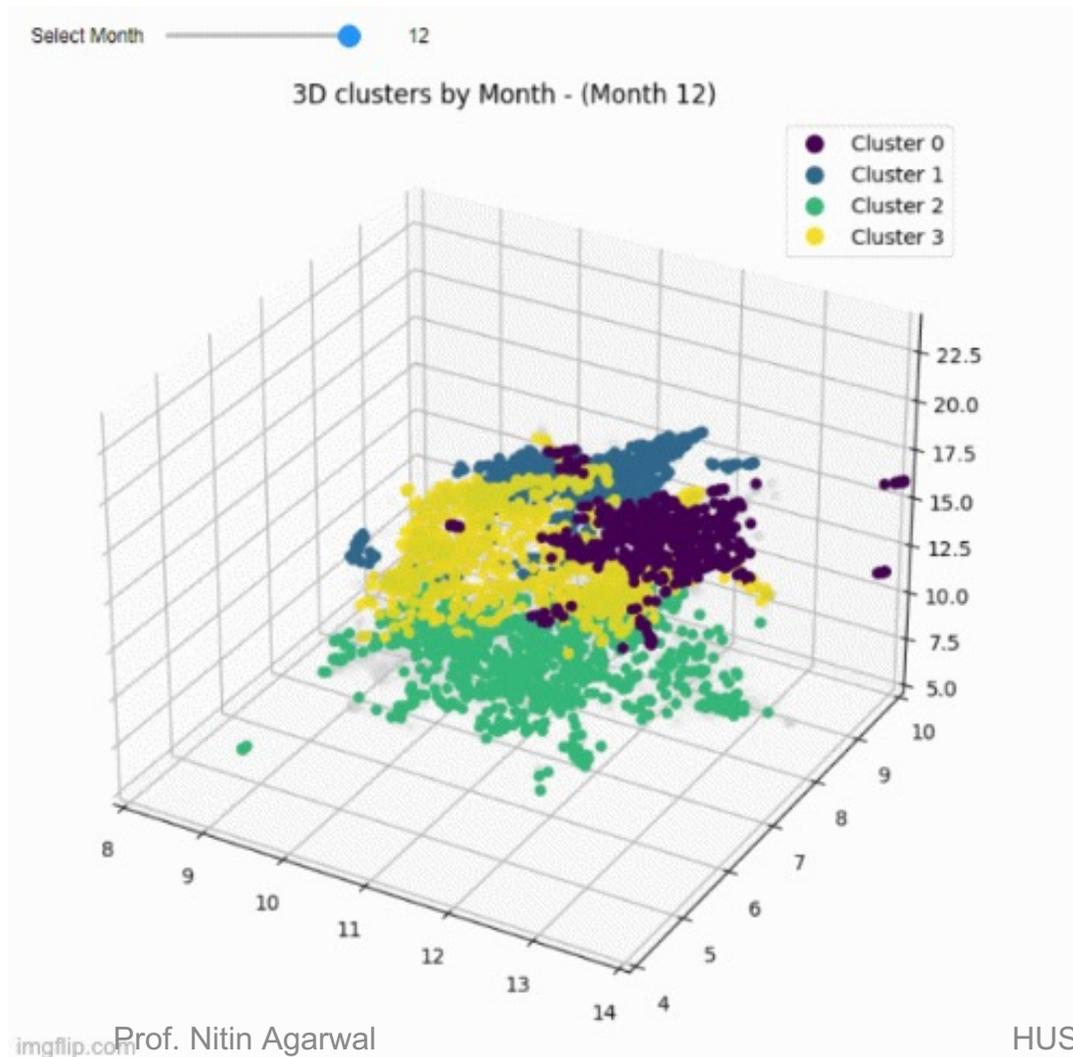
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Posting trend of videos from 2007 - 2023

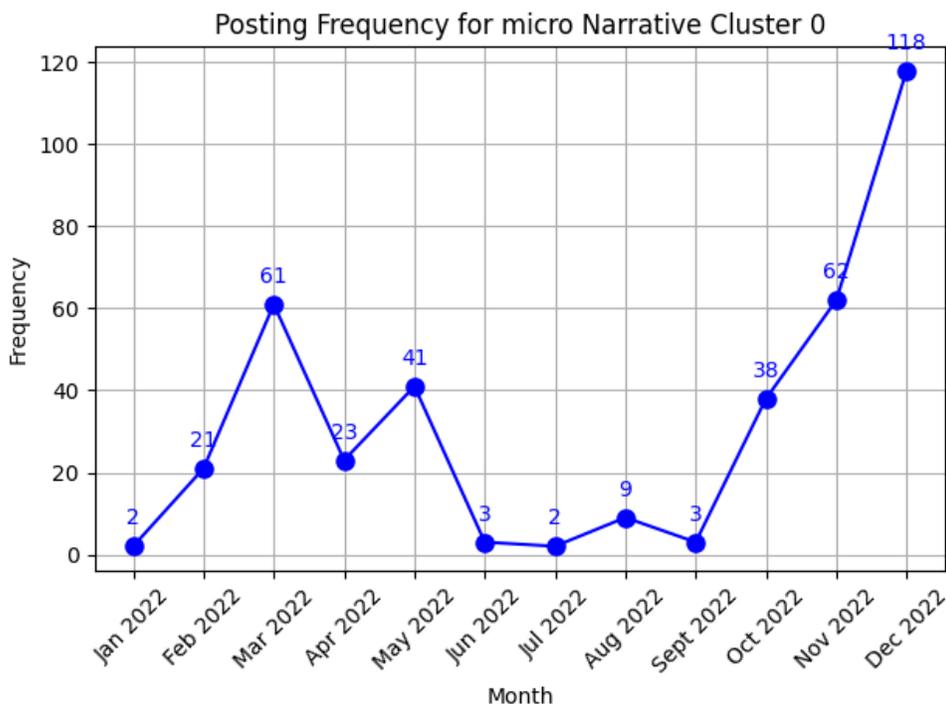
- Various dominant narratives at different inflection points.
- Clearly various narrative themes exist
 - US-China relations in SCS
 - China’s stance on Russia-Ukraine war, and its portrayal by the west
 - Commerce/Trade relations between Europe and China, and what US thinks about it
 - US-China-Taiwan and technology/semiconductor/chip supply chain
- This lends to conducting clustering and analyze different clusters of narrative themes and their trends over time (coming up)





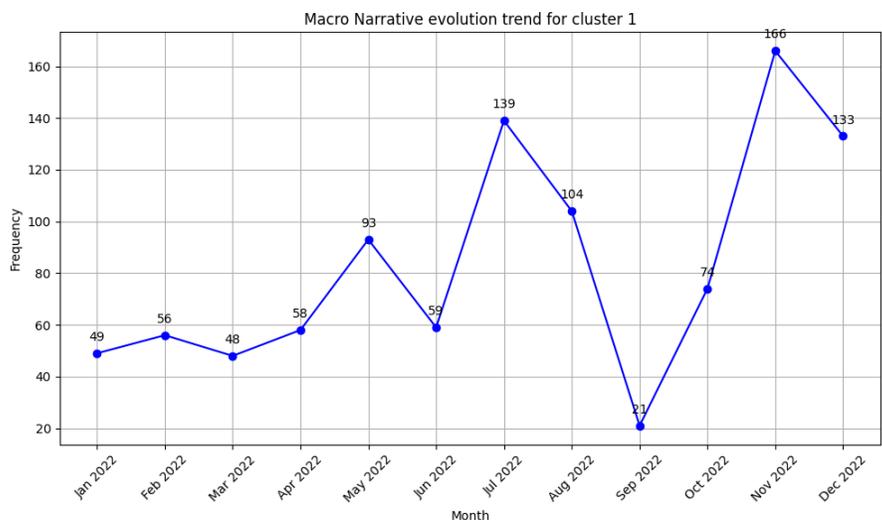
Cluster	Macro narrative
Cluster 0	Impact of Russia-Ukraine conflict on China's geopolitical strategy.
Cluster 1	China's aggression in South China Sea
Cluster 2	US investing in Philippines security. Philippines politics/elections, women/human rights, economic issues, etc. US/Biden's Asia policy.
Cluster 3	President Biden faces criticism over his policies.

Macro narrative: Impact of Russia-Ukraine conflict on China’s geopolitical strategy.

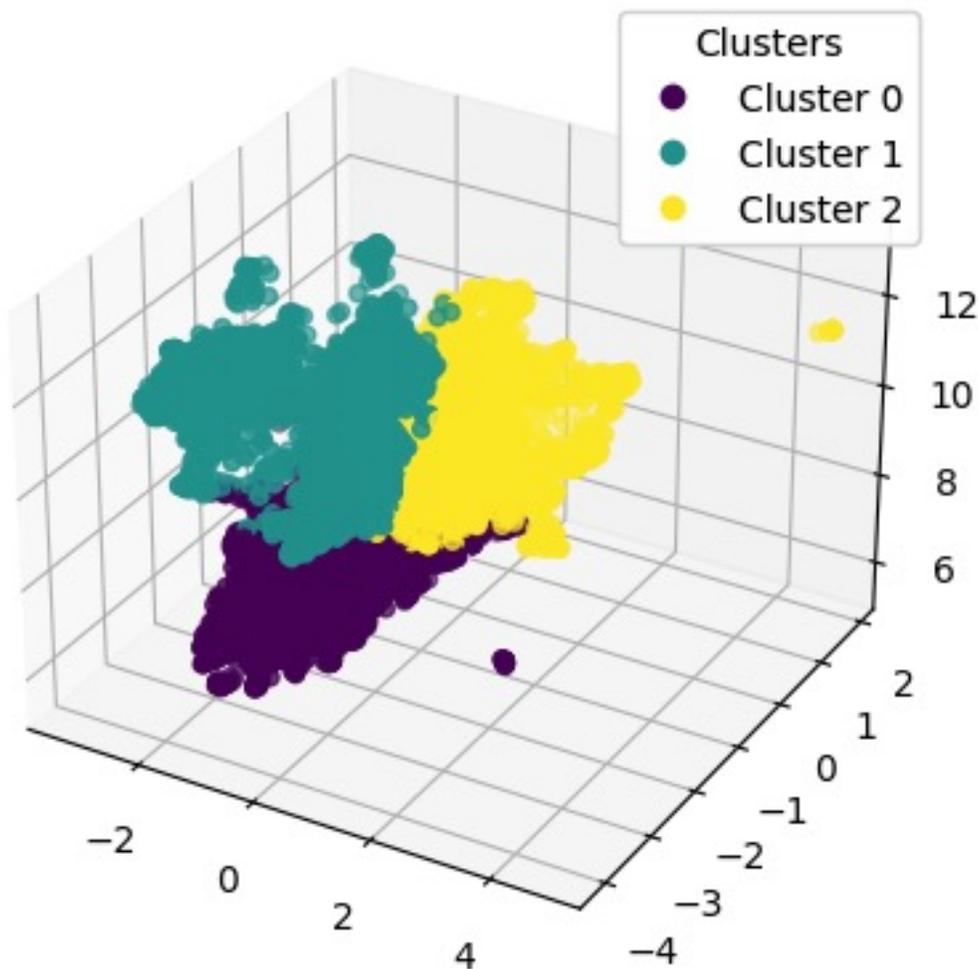


Month	Micro narrative
Jan	Russia and China are using different strategies to achieve world power. Russia is employing a combination of communism.
Feb	Russia counts on China's support in the face of sanctions. The Russian government is seeking China's support as the US and Europe threaten sanctions.
Mar	China is taking advantage of the world's focus on Russia to militarize islands in the South China Sea.
Apr	A State Department official warns China against taking the wrong lessons from Russia's actions in Ukraine. The China-Russia relationship goes deeper than their mutual dislike of America, as shown in a video.
May	China shifts position on the Ukraine conflict. China took a neutral stance earlier. Xi Jinping expressed deep grief over the outbreak of war. China is actively engaged in diplomacy.
Jun	Russia and China ally in US economic warfare. The article discusses how Russia and China are allies in US economic warfare. China closely observes the Russian-Ukrainian war, learning lessons from Ukraine.
Jul	Russia and China are modernizing their militaries to compete with the US
Aug	China and Russia join forces to challenge the dominance of the dollar.
Sep	China and Russia conduct joint military exercises. China has taken a middle-ground position on the Ukraine war, neither condemning Russia's actions.
Oct	US pressure is driving Russia, Iran, and China closer together. Russia is increasingly dependent on China due to the impact of Western economic sanctions.
Nov	NATO foreign ministers address the challenges posed by Russia and China.
Dec	China's multipolar strategy: US identifies Russia and China as long-term strategic competitors. From China's perspective on the Ukraine crisis: The Ukraine crisis has shocked many countries, but China has taken a measured approach. Russia and China's relations remain strong despite recent attacks.

Macro narrative: China's aggression in the South China Sea.

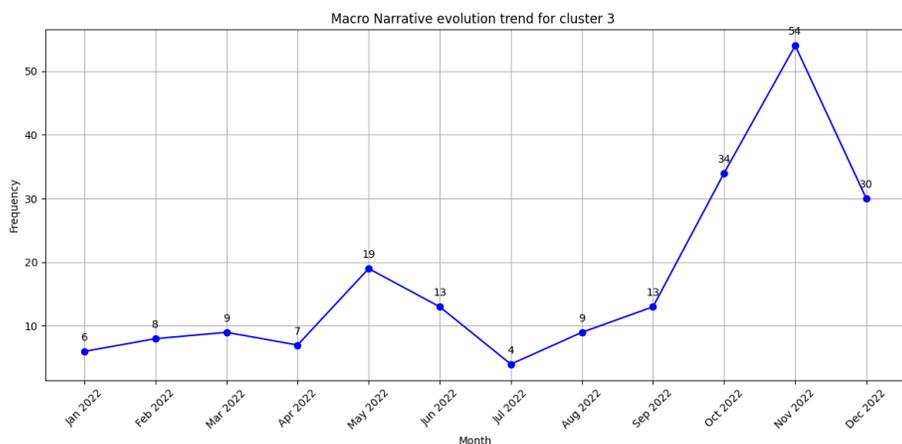


Month	Micro narrative
Jan	China employs a divide-and-conquer strategy in the South China Sea. China and the Philippines collaborate on medical research and economic recovery, driving a wedge between the Philippines and the US.
Feb	China's aggressive posture in the South China Sea is coming under greater pressure, leading countries to seek alternative supply chains to avoid dependence.
Mar	China disrespects its neighbors' sovereignty. China is studying the US response to Taiwan to determine the military force necessary.
Apr	Islands in the South China Sea cause escalating tensions between the US and China. The US is increasing its military presence in the region.
May	China is expanding its military presence in the region, sparking concerns among India and other countries in the area. China invades Taiwan, starting a large-scale conflict with the US. Chinese forces trying to take Taiwan are running low on supplies, leading to a secret war with the US.
Jun	Philippines lodges a diplomatic protest over Chinese ships in a disputed reef. Singapore has changed its strategy in the South China Sea.
Jul	China plans to build a huge industrial complex near an Australian naval base. Philippines is unlikely to enter joint development agreements in the South China Sea.
Aug	Southeast Asia is in a precarious position as tensions escalate between the U.S. and China over Taiwan. Nancy Pelosi's visit to Taiwan leaves the world on edge, and China responds with a series of military drills.
Sep	Civilians prepare for an invasion as China threatens Taiwan.
Oct	ASEAN member states are moving closer to a hardline stance on China in the South China Sea.
Nov	China is preparing for future war by modernizing its military and expanding its defense mobilization system.
Dec	ASEAN countries express concern about China's militarization of the South China Sea. Philippines faces a tough decision in dealing with China and the US.



Cluster	Macro narrative
Cluster 0	Entertainment and suggestions
Cluster 1	Philippines gets support from western allies
Cluster 2	Diaspora immigrant and their experiences

Macro narrative: President Biden faces criticism over his policies.



Month	Micro narrative
Jan	President Biden held a press conference today to answer questions about his administration's progress over the past year.
Feb	Joe Biden's failed attempt to get Saudi Arabia to increase oil production. The article discusses Joe Biden's recent efforts to persuade Saudi Arabia to increase.
Mar	Documents related to the Hunter Biden investigation raise questions about his tax strategy.
Apr	The Biden administration fails to address social inequalities in the United States.
May	President Biden focuses on inflation as a top domestic priority.
Jun	Joe Biden to visit Saudi Arabia on a damage control trip. Former Vice President Joe Biden is set to visit Saudi Arabia on a damage control trip.
Jul	Biden's trip to the Middle East carries political risks. In a move that raised eyebrows in Western media, the U.S.
Aug	FBI searches former President Trump's residence at Mar-a-Lago. Earlier this week, the FBI conducted a search of former President Trump's home for classified documents related to nuclear weapons. According to The Washington Post, people familiar with the investigation say.
Sep	President Trump declines to comment on classified documents retrieved from Mar-a-Lago. President Trump responds to Senator Ted Cruz's invitation to visit the U.S.-Mexico border.
Oct	Hunter Biden's ties to a Ukrainian gas company under scrutiny. Republicans used Hunter Biden's allegations to distract from Trump's scandals.
Nov	The American people are firing Democrats in record numbers and electing a Republican majority in the House of Representatives. The U.S. government calls for a ban on the TikTok app.
Dec	Biden's open border policy is causing the worst border crisis in American history, say House Republicans. House Republicans fire the Speaker who puts politics ahead of the people.

Keywords ▾

94 items.

South China Dispute

China

Japan

Trade × China ×

Japan ×

South China

Agriculture

Indian Ocean

Africa

South borders

Narratives ▾

22 items.

China-South Africa trade and investment increase

South Africa Needs to Address Manufacturing Sector in Order to Address Trade Deficit with China

Japan and China continue to strengthen bilateral relations

South Africa Needs to Address Manufacturing Sector in Order to Address Trade Deficit with China

China has been increasing its presence in the Indian Ocean region in recent years, with activities his has been met with a

Videos ▾

19 items.

U.S. welcomes better relations between China, Japan

Skynews Feb 3 2020 - 5:00 PM

Top diplomats of China and Japan agree to improve relations, cooperate on North Korea

CNN Oct 6 2020 - 2:10 PM

Leaders of China, Japan agree to improve bilateral relations

Arirang News Nov 17 2022 - 1:032 PM

Xi Calls for Building China-Japan Relationship in Accordance with Demands of New Era

Preview



Leaders of China, Japan agree to improve bilateral relations

Nov 17 2022 - 1:032 PM
Arirang News

Chinese President Xi Jinping and Japanese Prime Minister Fumio Kishida have reaffirmed their willingness to improve bilateral relations between their countries. The leaders met in person for the first time on Thursday. Kim Hyo-sun has more. The leaders of

A narrative browser demonstrating a way to explore narratives identified in the South China region from YouTube. An end user can browse narratives using a single or a collection of entities.

- AI-based narrative extraction: GPT-5 used to analyze YouTube videos on the South China Sea dispute.
- Narrative visualization tool: Developed to map narrative clusters and keywords over time.
- Content surge identified: Major increase in related videos, especially during 2021–2022.
- Key insight: Fivefold rise in anti-West narratives detected in 2022.
- Implications: AI + visualization enables scalable monitoring of geopolitical narratives and information competition.
- Current limitations: Method does not automatically filter duplicate or off-topic videos; irrelevant clusters were removed manually.
- Future work: Improve accuracy with computational filtering, expanded GPT-5 parameter testing, deeper content analysis (sentiment, emotion, toxicity), and further validation of the visualization tool.

- **5-year \$15 million grant from the U.S. Department of Defense, PI: Nitin Agarwal, Ph.D.**
- 20+ Graduate Research Assistants (MS/PhD)
(\$27k, Full Tuition coverage, Health Insurance covered)
- 10+ Postdoctoral fellowships
(\$60k - \$110k, Full benefits, Health insurance)
- 10+ Full stack developer, Dev Ops, Data engineer
(\$60k - \$100k, Full benefits, Health insurance)
- 2 System Engineer
(\$65k, Full benefits, Health insurance)

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- **Focal Structure Analysis** - <http://fsa.host.ualr.edu/>
- **COVID-19 Scam Tracker** - <https://cosmos.ualr.edu/covid-19>

Blogtrackers

vtracker



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