

## Introduction of the United Nations Security Council Dataset

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### **ABSTRACT**

Intelligent and advanced technologies have a dual nature. On one hand they support societal developments and progress and on the other hand sustain achieving one's aims and project desired (military) power on adversaries in times of conflict. The United Nations Security Council with its primary mission to maintain international peace and security has an important role in this. Through meetings, resolutions, and complex strategic decision-making they determine critical aspects and values to be respected, protected, and strengthened globally. On this behalf, ongoing academic and societal discourses focuses on the implications and consequences of different resolutions and decisions taken by the Security Council, but further understanding, involvement, or updates of the methods used are necessary. This research aims to enhance the transparency of the political decision-making processes in the Security Council by providing a large dataset containing meetings and resolutions since 1946 up to July 2022 as an artifact developed following a Design Science Research in a Data Science methodological approach. At the same time, this research aims to open a research path for a better understanding of existing political decision-making processes and further building intelligent methods that could support in a transparent and responsible manner the Security Council's decision-making processes.

**KEYWORDS:** United Nations, Security Council, political decision-making, foreign policy, war, dataset

## 1 INTRODUCTION

The UN Security Council is responsible to maintain global peace and security [1]. Whenever they come together, there is usually an ongoing situation putting that objective at risk. For instance, on the 4th of February 2012, the United Nations Security Council (UNSC) backed by the League of Arab States came together in New York to discuss the situation of the Syrian conflict [3]. Significant human rights violations were reported, and 200 civilians were already killed by the Syrian government. On this behalf, of the 15 UNSC members, 13 voted in favor of resolution S/2012/77, demanding a cease-fire, and asked for a fair process to come to peace and address the concerns of the Syrian people. Russia and China, both permanent members, did not agree and annulled the proposal by means of a veto vote. Moving forward ten years, on Friday, 25 February 2022, the UNSC met again in the same location to discuss draft resolution S/2022/155 - submitted by 81 states - requesting the Russian Federation an immediate cease in its use of force against Ukraine. 13 UNSC members voted in favor, China abstained, and Russia vetoed the resolution against itself calling the resolution anti-Russian and that “a cursory glance at the text will suffice” [4] to understand why that is.

These are two examples that trigger lots of questions. Questions like why were vetoes used when a resolution was backed by so many states? What is the content of the resolutions? How come when Russia vetoes a resolution, China usually follows? How did they defend their veto - if they did? More generally speaking, it raises the question of how individual states behave, collaborate, influence, and make political decisions on an international scale during Security Council meetings. Of great interest is what is discussed, who supports which resolutions, and what words are chosen in resolutions and meeting speeches.

Then the aim of this research is to build a dataset with information about meetings and resolutions of the UN Security Council, as a base to analyze these questions. The dataset should contain information from the beginning of its existence up to the moment of speaking. To be able to achieve this aim, due to both social as well as technical nature of this research, the Design Science Research methodology is followed through a Data Science approach [5][6][7]. In this way, the following research question is formulated: How to build a dataset that contains meetings conducted and resolutions adopted by the UN Security Council since the beginning of its existence? To make sure that a sustainable and realistic answer to the research question is provided, a well-defined segmentation is considered for splitting the tasks taken in this research in a clear and structured way, i.e., implying splitting the main research question into the following research sub-questions:

- RQ1: How to collect the dataset that contains both meetings and resolutions carried out by the UN Security Council?
- RQ2: How to structure the dataset collected? / How to build a software engineering architecture in order to effectively structure the dataset collected?
- RQ3: What are the characteristics of the dataset obtained?
- RQ4. What are possible research lines that could be followed in order to gather insights into the decision-making processes carried out by the UN Security Council?

Through its nature and the rich plethora of opportunities that it offers, the artifact proposed in this research implies the following academic and societal contributions:

- To the scientific community by providing a new research line that allows to analyze, understand, and improve different dimensions of the political decision-making

processes involved in the meetings conducted and resolutions adopted by the UN Security Council by means of designing and developing new supportive social, socio-technical, and/or technical solutions.

- To practitioners such as international relations and policy experts involved in the design, implementation, adoption, and assessment of (different aspects of) resolutions' activities and actions by producing awareness and further encouraging them to improve their decision-making processes.
- To society by providing an open dataset as a vehicle that encourages transparency, accountability, and responsibility for the political decisions taken and the reasoning of the agents involved while making them.

The remainder of the article is structured as follows. Section 2 establishes and discusses the research background of this research while analyzing relevant research studies from all the disciplines involved in this research. Section 3 discusses the research approach followed by addressing the activities taken for building the artifact proposed. Section 4 presents the design and implementation of the artifact reflecting on choices, reasoning, and results obtained. Conclusively, in Section 5 the findings of this research are briefly summarized in relation to the aim initially considered, reflections on identified limitations of this research are discussed, and at the end, further research and development ideas are considered.

## **2 BACKGROUND AND RELATED RESEARCH**

Given the multidisciplinary nature, aim, and implications of this research, related studies from international relations, political decision-making, software engineering, and AI fields of science have been considered in order to properly understand and reflect on the multiple facets and their particularities that characterize this research.

### **2.1 United Nations Security Council**

In 1920, shortly after World War I, the first intergovernmental organization "League of Nations" (LON) was born with a mission to maintain world peace [8]. In its existence, it had a maximum of 58 member states, all with a vote. After World War II had taken place, the league was dismantled and considered to be a failure since it did not succeed in achieving its primary objective. Then in 1945, the United Nations (UN) was formed as the league its successor [1]. The UN has several bodies: the General Assembly (GA), the International Court of Justice (ICJ), the Secretariat, the Economic & Social Council (ECOSOC), the Trustee Council, and the Security Council (SC). The UN General Assembly (UNGA) is the main organ of the UN and is the closest in character to the LON. It consists of 193 member states and can make recommendations. The responsibility of peacekeeping and security is delegated to the UN Security Council (UNSC) according to articles 24-25 of the UN Charter [1].

Thomas G. Weiss explains [9] that one of the primary reasons the LON failed was that for any security proposal to come through, each member state had to agree. To prevent this problem from happening again, the founders of the UN restricted the UNSC to only fifteen members. At the same time, the five founding states - the victors of World War II: the United States, the United Kingdom, China, Russia, and France - are considered permanent, more commonly referred to as the Permanent 5 or P-5. Unlike the P-5, the 10 other members receive 2-year seats and are rotated yearly. Besides the permanent seat, the P-5 also have a

unique privilege, the veto power. With it, they can reject any proposal, without an obligation to explain why they are casting a veto. As one of the UN its most prevalent bodies, the main tasks of UNSC are international peacekeeping and security, admission of new UN members, the appointment of the new Secretary-General of the UNGA, and to elect judges of the International Court of Justice (ICJ) in Den Hague [1]. In fact, it is the only UN body with the power to issue legally binding resolutions that other members need to accept.

The prime public instrument of discussion and decision-making used by the UN is resolutions. The UNSC leverages these as well and when matters concern the public interest, they are publicized as draft resolutions which are then either adopted, not adopted, or vetoed depending on the voting outcome of the 15 members. As such, these public resolutions are discussed in the UNSC meetings, where member states express their reasoning, preference, or dismay. While those meetings are primarily oral communicative events, they are transcribed to text, translated, and later shared together with the relevant resolutions. When resolutions concern a procedural issue, nine UNSC members need to approve for it to pass. Conversely, for issues and decisions of substance, nine members need to approve without any veto cast, or without seven members voting against it. Furthermore, in conflict situations, the UNSC will recommend a peaceful settlement. When this fails and it becomes too violent, the UNSC may issue ceasefire directives, send peacekeeping forces, establish economic sanctions, or launch collective military action.

## **2.2 Political Decision Making**

To be able to understand the UN political decision-making processes, one must have a fundamental understanding of their nature, types, and influencing factors involved. On this behalf, a fundamental study on understanding both formal and informal political decision-making processes as well as the factors influencing and the main elements involved in UN's political decisions made, e.g., self-interest and public opinion, is represented by the work of Kaufmann [10]. Furthermore, Bhouraskar [11] analyses different activities taken by the UN together with their corresponding actions grouping them into two main categories: (i) responses to emergencies such as national conflicts, civil wars, and international wars, and (ii) continuation of earlier adopted policies by the UN. These actions are brought to practice at (i) strategic level through negotiation, (ii) strategic/tactic level through implementation and generation of new ideas and proposals, and (iii) tactic level by providing information and generating as well as promoting ideas and proposals [12]. While the UN Security Council advocates for supporting critical aspects and values that modern societies have through maintaining international peace and security, for decades, due to the different implications of its decisions and actions, contradictory discourses and criticism exist in this sense and are aligned with questioning its role, its relevance to current global needs, and its functioning mechanisms, e.g., sanctions reforms, veto use, drafting resolutions [13], all correlated to world politics dimensions, e.g., superpower diplomacy, multinational cooperation, and regional communities [14][15][16].

## **2.3 Transparency, Accountability, and Explainability**

As expressed in the 9079th meeting of the UN Security Council [13], the need for transparency and through it creating a transparent organ “capable of tackling contemporary global challenges” is real. Moreover, the same resource highlights the importance of understanding “how much of its proceedings are carried out in a visible, public way, and how much in private”, facts that could relate and imply not only to issues regarding transparency

but could also produce feelings of mistrust and even illegitimacy, thus “a more accountable and transparent Council [Security Council] would be better placed to meet its core tasks of preventing and resolving conflicts” [13].

Through its nature, transparency relates to an important characteristic of information, i.e., availability, and specifically, information availability about internal decisions of an agent or organization while strengthening the accountability of agent’s/organization’s decisions made and playing a major role in establishing and promoting good governance [17][18]. Furthermore, de Fine Licht [19] argues for increasing transparency in political decision-making processes for securing or enhancing legitimacy, decision acceptance, and public trust. Along these lines, Wang & Zang [20] considers that political transparency is associated with proper operating performance, lower information asymmetry, and lower equity risk.

On this behalf, since 2005 earlier initiatives for establishing measures for ensuring accountability, transparency, inclusiveness, and representativeness of decisions are reforms (i.e., resolutions) adopted, and through these the strengthening of effectiveness and legitimacy of the UN Security Council started to be formulated [21][22]. Among the initiatives taken are (i) debates on expanding the Security Council, (ii) availability of internal audits and reports by means of evaluations and investigations conducted by Member States, (iii) meetings on regular basis with the agents involved in a specific situation, and (iv) more public meetings held while the number of external agents such as NGOs increases [23][24][25]. Moreover, a recent resolution, i.e., the landmark resolution A/RES/76/262 [26] is adopted in order to hold the five permanent members of the Security Council accountable for their use of veto, through a direct criticism for the inaction taken by the Security Council in the ongoing war in Ukraine [26]).

## 2.4 Datasets

Another important measure for increasing transparency and accountability in the political decision-making processes taken by the UN Security Council and further increasing citizen awareness [27] is through open data and/or publicly available datasets [28][29] with (ideally both informal and formal) meetings conducted and resolutions adopted. On this behalf, through its Dag Hammarskjöld Digital Library, the UN publicly made available both formal meetings conducted, and resolutions adopted since its existence, i.e., 1946.

On these grounds, Biersteker et al. introduce the Targeted Sanctions Consortium quantitative and qualitative datasets [30] that contain all UN targeted sanctions between 1991 and 2013 corresponding to 23 different country regimes clustered into 63 case episodes for analysing facts such as types of sanctions, target populations, and different combinations of targeted measures. Furthermore, Clayton, Dorussen & Böhmelt propose the UN Peace Initiative dataset [31] that contains 469 UN initiatives for conflict prevention, crisis management, mediation, peacekeeping, and peacebuilding based on all initiatives mandated by the UN Security Council, the General Assembly and the Secretary General between 1946 and 2015. Furthermore, Jetschke, & Schlipphak present the MILINDA dataset [32] that captures peace operations, more specifically, both UN and non-UN peace operations, information about mission types, the existence of target state consent as well as UN authorization between 1947 and 2016. Along these lines, the UN Peace Security Data Hub [33] released recently (i) a dataset with veto votes by the UN Security Council since 1946 with data visualization options structured per year, permanent members, and top 15 topics tackled [34], and (ii) a dataset with past and present UN peacekeeping operations with information about their headquarters

and mandate dates [35]. Moreover, Richard Hanania applied machine learning text classification methods on UNSC resolutions between 1946 and 2017 [36], to conclude they can be divided into returning topics: War, Punitive, and Humanitarian. In addition, such computational text analysis methods were able to uncover trends missing by previous efforts.

As it can be seen, there is an increasing growing social, institutional, and academic interest towards thinking, supporting, and applying different social as well as technical measures for increasing transparency and accountability of the political decision-making processes of the UN Security Council, but concrete efforts on building a dataset with the meetings carried out as well as the resolutions thought and adopted by the UN Security Council, to the best of our knowledge, are lacking, hence it represents the knowledge gap that this research intends to tackle.

Therefore, we propose a new dataset ‘UNSCD’ that digitized the UNSC public meetings and resolutions, along with their text transcripts for each, veto voting to any, including by which P-5 members, the topics of discussion, dates, and years in which they were handled, since the beginning in 1946 until July 2022. The process is automated permitting us to further extend the dataset as time progresses, although we hope that this research would be at the base of a UN-maintained public dataset.

### 3 RESEARCH METHODOLOGY

The goal of this research is to provide a dataset that contains information about the meetings carried out and the resolutions adopted by the UN Security Council from its start moment until the moment of speaking. On this behalf, taking into consideration the fact that the aim defined has direct societal roots as well as implications, a Design Science Research [5] methodology is followed in a Data Science approach [6]. During this process, a multidisciplinary stance is considered by embedding concepts, methods, and techniques from international relations, political decision-making, software engineering, and AI domains in order to build the technical artifact, i.e., dataset, that this research proposes. Hence, the research activities carried out in this study are further discussed:

- Problem definition: taking into consideration the increasing need for integrating and assessing socio-ethical aspects like transparency, accountability, and trust of both the reasoning implied and the results obtained from different political decision-making processes of global institutions such as UN, the target audience, scope, and time period are established as basics for the design phase of the artefact proposed in this research.
- Solution design and development: once the design input is defined in the previous research phase, the architecture of the artifact is established and further implemented in Python making use of a SQL-based database environment, in other words, classical Data Science development instruments and technologies. Further details about the implementation and evaluation phases of the artifact proposed are discussed in Section 4 of the present article.
- Solution Evaluation: the artifact proposed in this research is evaluated by considering metrics such as data quality, data reliability, data consistency, and data usefulness [37][38][39][40], and further directly demonstrated through data points instantiations

that correspond to different meetings and resolutions of the UN Security Council debating and trying to provide realistic peaceful solutions to ongoing conflicts.

- Communication: the results obtained in this research take the form of a dataset whose architecture and meaning are openly shared with both academic and practitioner communities by means of the current article as well as corresponding presentations in relevant scientific venues. The dataset is open sourced in its entirety and made available at <https://github.com/intreleng-research/unsc-dataset> for everyone to use and contribute.

## 4 DATASET COLLECTION AND ANALYSIS

We start this section by explaining the complexities of gathering the required data and how we came to a working and repeatable process. We then describe the used database design to store the data and explain our choices made. We continue to give an elaborate overview of the design and implementation strategies of the software built.

We started by evaluating what datasets exist that capture the UN Security Council's meetings, resolutions, and voting. To the best of our knowledge, there is no publicly available dataset that entails every element we want to have combined, between 1946 and today, 2022. The UN Dag Hammarskjöld Digital Library (UNDL) confirmed that while there are subsets of data exportable, they are very complex to access and understand, and are often unrelatable with other exports if the requested data is already available as such export.

### 4.1 Dataset Collection Process

In order to collect the data, we built a Python-based web scraping solution. The solution was designed in such a way it knows how to navigate and handle different formats and approaches used by the UNDL over the years. As can be seen in figure 4.1, the process starts by determining which year(s) we are interested in. Without specifying any years, the solution will try and fetch all the data from the very first meeting of the UN Security Council in 1946, all the way up until July 2022. Next, it processes the Veto overview page to be able and have a lookup table to find which state(s) vetoed a given resolution.

On the meeting summary page for a given year, it searches for resolutions and queues them for processing. In earlier years, draft resolutions were of the form 'S/X' - 'S/XXXX' where X denominates the n-th draft resolution. Before 1949, the format 'S/PV.X' can also be found. Later the UN made that more structured by using the format 'S/YYYY/X' - 'S/YYYY/XXXX' where 'YYYY' is the year in which the resolution was drafted, and 'XXXX' the n-th resolution that year. Adopted resolutions have the format 'S/RES/XXXX'.

Next, the solution iterates over each queued record and downloads and extracts the meeting transcript. The found resolutions associated with each meeting are then evaluated to be adopted, not adopted, or vetoed. Subsequently, the resolution text is downloaded and extracted. When the resolution was found to be adopted, an extra lookup step is needed to identify what the original draft resolution was. This lookup is facilitated through an Excel export provided by the UNDL.

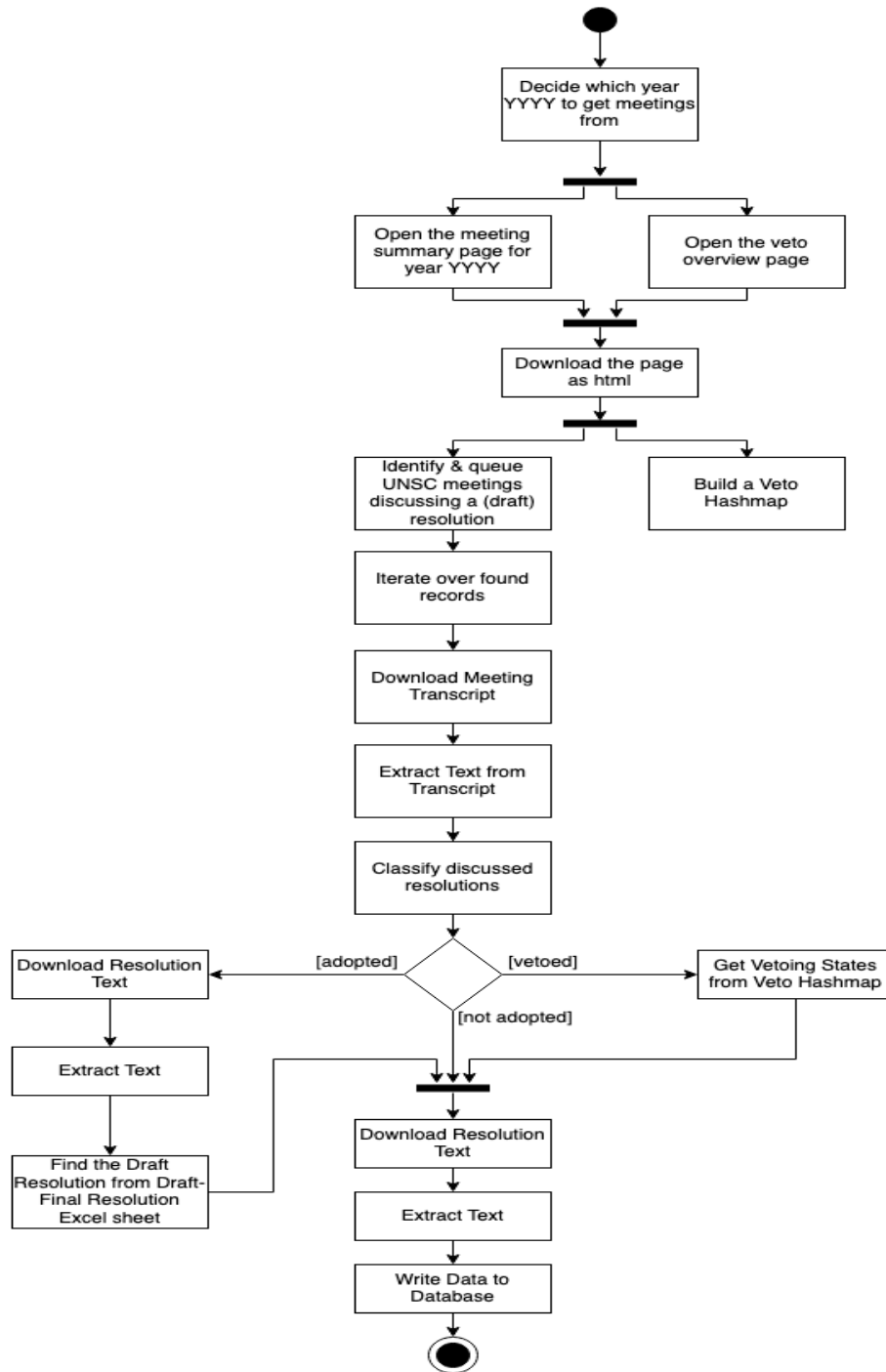


Figure 4.1: Dataset build flow

## 4.2 Dataset Limitations

Of particular interest is the relation between resolutions, the time dimension, topics, the meetings in which they were discussed, and possible veto voting. It is important to understand that the UN records the meeting at which a draft resolution is adopted, not all the meetings at which it may have been considered. Also, more than one draft resolution can be considered in a meeting. As such, it also occasionally happens that more than one resolution is adopted during a meeting. Detailed voting information is not available with the exception of veto votes. Which member abstained, voted in favor, or was against can only be found in the meeting transcripts [2]. This can be considered for future research.



Furthermore, this dataset only considers resolutions that have been publicly discussed and recorded in a UNSC meeting as adopted, not adopted, or vetoed. Presidential Statements are not stored but could also be considered for future research. Only the data that is complete and correct is stored.

Conversely, there are still known inconsistencies that could not be resolved. These are, for instance, resolutions for which no meeting was recorded, resolutions for which no data is available yet (it takes around 10 days before all transcripts are translated and published in the multiple languages the UN uses), or that following rule 57 of the UNSC Provisional Rules of Procedure [41], the UNSC has only later made public, up to that time considered confidential meeting records and documents.

Additionally, an important limitation to be aware during research in this area is that texts, transcribed before 1994 were OCR'd by the UN, and have mixed results in terms of textual reliability. Post-1994, the text extraction is completely accurate. Furthermore, during the period March 2020 until January 2022, the UNSC held their recordings virtually due to COVID-19 causing the structure and content of the meetings to deviate from their normal form.

### 4.3 Dataset Design

The dataset is modeled as a relational database to the entities defined in the domain: UNSC meetings, resolutions, member states, and vetoes cast. The tables are designed in such a way that the columns capture unique entity properties relevant to our research domain and facilitate structured data analysis. It is important to consider and understand why we do not include voting information other than veto voting. As discussed earlier, voting information is only recorded when a resolution was either adopted, or vetoed. When it is not adopted, there is no detailed record of it [42]. This technical limitation led to only capturing veto voting. In Figure 4.2 the Entity Relation Diagram of the database is depicted and further elaborated.

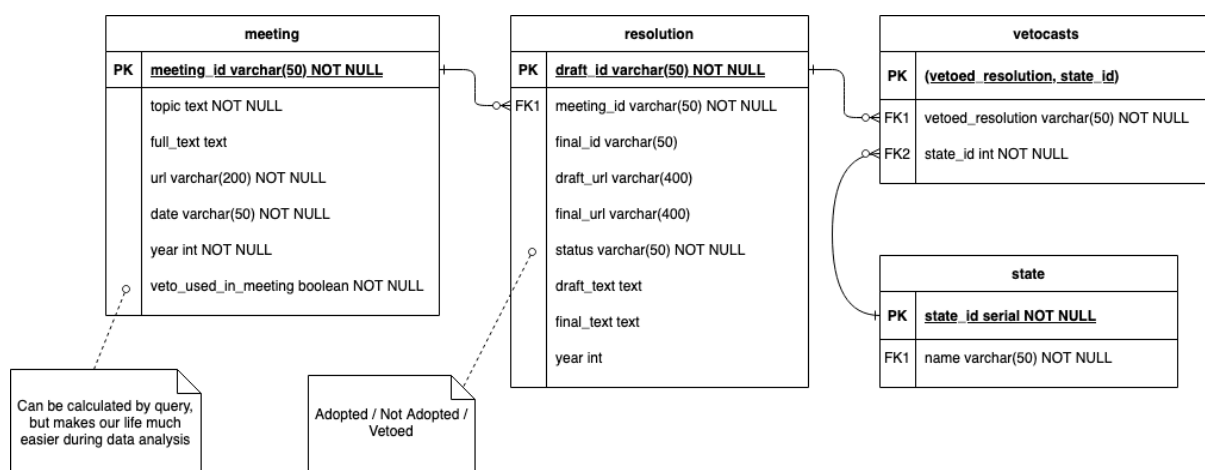


Figure 4.2: The Entity Relation Diagram of our Database

As discussed in section 4.2, only the meetings in which draft resolutions are finally decided upon are recorded. They do not record all the meetings in which the resolution may have been considered or discussed. As such, there is a one-to-many relation between a meeting and a resolution. One meeting can have multiple resolutions discussed, but a resolution is only recorded in one meeting.

A meeting has a unique ID, the topic of discussion, the date and the year when the meeting took place, the full transcript of the meeting discussion, a URL to the online transcript, and - in our dataset - a normally considered redundant field that indicates whether or not a veto was used during a meeting. In a typical database design, you would not find such a field since it can be calculated using queries. We deliberately chose to use it as it simplifies queries related to meetings with veto usage, making data analysis easier. This is a conscious design choice that allows us to find meetings where at least one veto was cast against a resolution without having to use subqueries or joins involving multiple tables.

A resolution has its unique draft id as the primary key, the meeting in which it was discussed, its final id in the case it became an adopted resolution, the applicable resolution texts, the year the resolution was drafted, links to the texts online, and their status after the meeting: adopted, not adopted, or vetoed. Such a resolution can be vetoed by any of the P-5 members, also at the same time. In other words, there is a many-to-many relation between resolutions and states with veto power. We introduced a junction table for this to convert this to two many-to-one relations.

## 5 DATASET ANALYSIS

Now that we have the dataset introduced in the previous section, we proceed with giving some example exploratory analysis outcomes. On this behalf, for implementation purposes, a Jupyter Notebooks [43] environment was used for its user-friendly data analysis and operations capabilities.

As such, with the SQL database loaded into a dataframe, an overview of the 2614 conducted and recorded in our dataset is shown in Figure 5.1.

meetings_df							
	meeting_id	topic	full_text	url	date	year	veto_used_in_meeting
0	S/PV.49	The Spanish question	taulnwhich could be agreed to by all of us) an...	https://undocs.org/en/S/PV.49	26 June	1946	True
1	S/PV.8436	The situation in the Middle East	United Nations\nS/PV.8436\nSecurity Council\nS...	https://undocs.org/en/S/PV.8436	21 December	2018	False
2	S/PV.8401	The situation in the Central African Republic	United Nations\nS/PV.8401\nSecurity Council\nS...	https://undocs.org/en/S/PV.8401	15 November	2018	False
3	S/PV.8398	The situation in Somalia	United Nations\nS/PV.8398\nSecurity Council\nS...	https://undocs.org/en/S/PV.8398	14 November	2018	False
4	S/PV.8400	Reports of the Secretary-General on the Sudan ...	United Nations\nS/PV.8400\nSecurity Council\nS...	https://undocs.org/en/S/PV.8400	15 November	2018	False
...	...	...	...	...	...	...	...
2609	S/PV.9054	Reports of the Secretary-General on the Sudan ...	United Nations\nS/PV.9054\nSecurity Council\nS...	https://undocs.org/en/S/PV.9054	3 June	2022	False
2610	S/PV.8979	Letter dated 28 February 2014 from the Perman...	United Nations\nS/PV.8979\nSecurity Council\nS...	https://undocs.org/en/S/PV.8979	25 February	2022	True
2611	S/PV.8981	The situation in the Middle East	United Nations\nS/PV.8981\nSecurity Council\nS...	https://undocs.org/en/S/PV.8981	28 February	2022	False
2612	S/PV.9025	The situation in Libya	United Nations\nS/PV.9025\nSecurity Council\nS...	https://undocs.org/en/S/PV.9025	29 April	2022	False
2613	S/PV.9044	The situation in Somalia	United Nations\nS/PV.9044\nSecurity Council\nS...	https://undocs.org/en/S/PV.9044	26 May	2022	False

2614 rows x 7 columns

Figure 5.1: a sampled overview of the meetings in our dataset

Across these meetings, 2690 resolutions have been discussed as illustrated in Figure 5.2.

resolutions_df											
id	draft_id	final_id	draft_url	final_url	status	draft_text	final_text	year	meeting_id		
0	1	S/PV.49	None	https://undocs.org/en/S/PV.49	None	vetoed	tau\nwhich could be agreed to by all of us) an...	1946	S/PV.49		
1	5	S/2018/1143	S/RES/2450(2018)	https://undocs.org/en/S/2018/1143	https://undocs.org/en/S/RES/2450(2018)	adopted	\nUnited Nations \n \nS/2018/1143 \n \n \nSec...	2018	S/PV.8436		
2	6	S/2018/1025	S/RES/2446(2018)	https://undocs.org/en/S/2018/1025	https://undocs.org/en/S/RES/2446(2018)	adopted	\nUnited Nations \n \nS/2018/1025 \n \n \nSec...	2018	S/PV.8401		
3	7	S/2018/1010	S/RES/2444(2018)	https://undocs.org/en/S/2018/1010	https://undocs.org/en/S/RES/2444(2018)	adopted	\nUnited Nations \n \nS/2018/1010 \n \n \nSec...	2018	S/PV.8398		
4	8	S/2018/1021	S/RES/2445(2018)	https://undocs.org/en/S/2018/1021	https://undocs.org/en/S/RES/2445(2018)	adopted	\nUnited Nations \n \nS/2018/1021 \n \n \nSec...	2018	S/PV.8400		
...	...	...	...	...	...	...	...	...	...	...	...
2685	3017	S/2022/443	S/RES/2636(2022)	https://undocs.org/en/S/2022/443	https://undocs.org/en/S/RES/2636(2022)	adopted	\nUnited Nations \n \nS/2022/443 \n \n \nSecu...	2022	S/PV.9054		
2686	3019	S/2022/155	None	https://undocs.org/en/S/2022/155	None	vetoed	\nUnited Nations \n \nS/2022/155 \n \n \nSecu...	2022	S/PV.8979		
2687	3020	S/2022/158	S/RES/2624(2022)	https://undocs.org/en/S/2022/158	https://undocs.org/en/S/RES/2624(2022)	adopted	\nUnited Nations \n \nS/2022/158 \n \n \nSecu...	2022	S/PV.8981		
2688	3021	S/2022/356	S/RES/2629(2022)	https://undocs.org/en/S/2022/356	https://undocs.org/en/S/RES/2629(2022)	adopted	\nUnited Nations \n \nS/2022/356 \n \n \nSecu...	2022	S/PV.9025		
2689	3022	S/2022/412	S/RES/2632(2022)	https://undocs.org/en/S/2022/412	https://undocs.org/en/S/RES/2632(2022)	adopted	\nUnited Nations \n \nS/2022/412 \n \n \nSecu...	2022	S/PV.9044		

2690 rows x 10 columns

Figure 5.2: a sampled overview of the resolutions in our dataset

As discussed in Section 4.2, multiple resolutions could be evaluated in a single meeting. Accordingly, in Figure 5.3 one such example is provided.

```
meetings_and_resolutions_df.query('meeting_id == "S/PV.906"')[['meeting_id', 'draft_id', 'final_id', 'status']]
```

meeting_id	draft_id	final_id	status
1605	S/PV.906	S/4523	vetoed
1606	S/PV.906	S/4519	not adopted
1607	S/PV.906	S/4525 S/RES/157(1960)	adopted

Figure 5.3: an example of one meeting with multiple resolutions, each with a different outcome

Figure 5.4 and Figure 5.5 serve as additional examples of the richness this dataset provides and how it enables interesting new use-cases and insights. While Figure 5.4 demonstrates topic analysis returning meeting and resolution info for those meetings related to ‘Bosnia’, Figure 5.5 showcases the ability to perform natural language processing on meetings and resolutions by providing the top-100 words seen in UNSC meetings in the form of a word cloud.

```
meetings_and_resolutions_df[meetings_and_resolutions_df['topic'].str.contains("Bosnia")][['meeting_id', 'draft_id', 'final_id', 'topic', 'date', 'year', 'status']]
```

meeting_id	draft_id	final_id	topic	date	year	status	
35	S/PV.8392	S/2018/989	S/RES/2443(2018)	The situation in Bosnia and Herzegovina	6 November	2018	adopted
74	S/PV.8658	S/2019/859	S/RES/2496(2019)	The situation in Bosnia and Herzegovina	5 November	2019	adopted
162	S/PV.8896	S/2021/913	S/RES/2604(2021)	The situation in Bosnia and Herzegovina	3 November	2021	adopted
213	S/2020/108	S/2020/1080	S/RES/2549(2020)	The situation in Bosnia and Herzegovina	5 November	2020	adopted
493	S/PV.7481	S/2015/508	None	The situation in Bosnia and Herzegovina	8 July	2015	vetoed
...	...	...	...	...	...	...	...
2576	S/PV.3909	S/1998/648	S/RES/1184(1998)	Bosnia and Herzegovina	16 July	1998	adopted
2589	S/PV.5567	S/2006/900	S/RES/1722(2006)	Bosnia and Herzegovina	21 November	2006	adopted
2592	S/PV.5782	S/2007/673	S/RES/1785(2007)	Bosnia and Herzegovina	21 November	2007	adopted
2606	S/PV.7803	S/2016/935	S/RES/2315(2016)	The situation in Bosnia and Herzegovina	8 November	2016	adopted
2647	S/PV.4030	S/1999/834	S/RES/1256(1999)	Bosnia and Herzegovina	3 August	1999	adopted

65 rows x 7 columns

Figure 5.4: An example output of resolutions on the topic ‘Bosnia’



Figure 5.5: A word cloud of the top-100 most common words seen in UNSC meetings

## 6 CONCLUSIONS

The initial intake of curiosity around political decision-making, how individual states behave, collaborate, influence, and make political decisions on an international scale during Security Council meetings, the topics being discussed, and what words are chosen in resolutions and meeting speeches was not easily addressable with the existing data publicly available.

To tackle these issues, this research built and proposed a dataset with meetings and resolutions of the UN Security Council from 1946 until present by following a Design Science Research methodology in a Data Science approach. Accordingly, this research succeeded in answering its main research question as well as its research sub-questions by means of reviewing existing academic and institutional corresponding studies and further collecting and building the dataset as a data-based software artifact. Through this artefact, this research aims to produce and further strengthen awareness, transparency, and accountability of different political decision-making processes carried out by the UN Security Council.

Furthermore, this research aims to open a new research line into building analytics and intelligent modelling and simulation solutions for activities such as (i) understanding the topics discussed and corresponding political decisions made, (ii) understanding the role, behaviour, and relations between the agents participating in the political decision-making processes involved, and (iii) designing intelligent solutions for strengthening the political decision-making processes involved by integrating diverse socio-ethical norms and values as well as expert opinion through responsible and explainable lenses [44][45].

Finally, we hope this is just the beginning of a single UN dataset that can be further expanded and contributed to - eventually owned by the UN itself by enabling new research lines to be defined by both academia and practitioners together with applications for policy and strategy-building decision-makers. Ultimately, bringing further good to this world.

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## REFERENCES

- [1] Charter of the United Nations. (2015, August 10). <https://www.un.org/en/charter-united-nations/index.html>
- [2] K Library, D. H. (n.d.). Research Guides: UN Security Council Documentation: Voting Information [Research guide]. United Nations. Dag Hammarskjöld Library. Retrieved September 26, 2022, from <https://research.un.org/en/docs/sc/voting>
- [3] Carswell, A. J. (2013). Unblocking the UN Security Council: The Uniting for Peace Resolution. *Journal of Conflict and Security Law*, 18(3), 453–480. <https://doi.org/10.1093/jcsl/krt016>
- [4] Security Council Seventy-seventh year 8979th meeting Friday, 25 February 2022, 5 p.m. New York. (n.d.). 17.
- [5] Peffers, K., Tuunanen, T., & Niehaves, B. (2018). Design science research genres: Introduction to the special issue on exemplars and criteria for applicable design science research. *European Journal of Information Systems*, 27(2), 129–139. <https://doi.org/10.1080/0960085X.2018.1458066>
- [6] Shearer, C. (2000). The CRISP-DM Model: The New Blueprint for Data Mining. *Journal of Data Warehousing*, 5.
- [7] Maathuis, E. C., Pieters, W., & van den Berg, J. (2021). Decision support model for effects estimation and proportionality assessment for targeting in cyber operations. *Journal of Defence Technology*, 17(2), 352-374. <https://doi.org/10.1016/j.dt.2020.04.007>
- [8] Northedge, F. S. (1986). *The League of Nations: Its life and times 1920 - 1946*. Holmes & Meier.
- [9] Weiss, T. G. (2003). The illusion of UN Security Council reform. *The Washington Quarterly*, 26(4), 147–161. <https://doi.org/10.1162/016366003322387163>
- [10] Kaufmann, J. (1980). *United Nations: Decision Making*. Martinus Nijhoff Publishers.
- [11] Bhouraskar, D. (2006). *United Nations' Development Aid: A Study in History and Politics*.
- [12] Reflective practices at the Security Council: Children and armed conflict and the three United Nations—Ingvild Bode, 2018. (n.d.). Retrieved September 26, 2022, from <https://journals.sagepub.com/doi/10.1177/1354066117714529>
- [13] Speakers Call for Sanctions Regimes Reforms, Restraining Veto Use, Changing System of Drafting Resolutions, as Security Council Considers Working Methods | UN Press. (n.d.). Retrieved September 26, 2022, from <https://press.un.org/en/2022/sc14950.doc.htm>
- [14] Luard, E. (1979). *The United Nations: How it Works and What it Does*. Springer.
- [15] Akande, D. (1997). *The International Court of Justice and the Security Council: Is there Room for Judicial Control of Decisions of the Political Organs of the United*

Nations? *International and Comparative Law Quarterly*, 46(2), 309-343.  
doi:10.1017/S0020589300060450

- [16] Butler, R. (2012). Reform of the United Nations Security Council. *Penn St. JL & Int'l Aff.*, 1, ii.
- [17] What Is Transparency?: *Public Integrity: Vol 11, No 4.* (n.d.). Retrieved September 26, 2022, from <https://www.tandfonline.com/doi/abs/10.2753/PIN1099-9922110400>
- [18] de Fine Licht, J., & Naurin, D. (2022). Transparency. In *Handbook on theories of governance* (pp. 226-233). Edward Elgar Publishing.
- [19] De Fine Licht, J. (2014). Transparency actually: How transparency affects public perceptions of political decision-making. *European Political Science Review*, 6(2), 309-330. doi:10.1017/S1755773913000131
- [20] Wang, J., & Zhang, H. (2022). Political transparency, corporate governance and economic significance. *International Journal of Disclosure and Governance*, 19(1), 49-66. <https://doi.org/10.1057/s41310-021-00127-z>
- [21] UN Transparency and Accountability Initiative. (n.d.). United States Mission to the United Nations. Retrieved September 26, 2022, from <https://usun.usmission.gov/mission/management-and-reform-section/un-transparency-and-accountability-initiative/>
- [22] UN A66 L42 Rev 2 (2012). Enhancing the accountability, transparency, and effectiveness of the Security Council: revised draft resolution / Costa Rica, Jordan, Liechtenstein, Singapore and Switzerland, from <https://digitallibrary.un.org/record/727119>
- [23] GPF (2010). Transparency and Working Methods. Global Policy Forum. <https://archive.globalpolicy.org/security-council/security-council-reform/transparency-including-working-methods-and-decisionmaking-process.html>
- [24] UN Estonia (2021). Accountability, coherence and transparency. <https://un.mfa.ee/un-security-council/accountability-coherence-and-transparency/>
- [25] UN Mission. Transparency and Accountability Initiative (2011). <https://usun.usmission.gov/mission/management-and-reform-section/un-transparency-and-accountability-initiative/>
- [26] UN GA/12417. General Assembly Adopts Landmark Resolution Aimed at Holding Five Permanent Security Council Members Accountable for Use of Veto. <https://www.un.org/press/en/2022/ga12417.doc.htm>
- [27] Dellmuth, L. M. (2016). The knowledge gap in world politics: Assessing the sources of citizen awareness of the United Nations Security Council. *Review of International Studies*, 42(4), 673-700.
- [28] Lourenço, R. P. (2015). An analysis of open government portals: A perspective of transparency for accountability. *Government information quarterly*, 32(3), 323-332.

- [29] Lněnička, M., Machova, R., Volejníková, J., Linhartová, V., Knezackova, R., & Hub, M. (2021). Enhancing transparency through open government data: The case of data portals and their features and capabilities. *Online Information Review*.
- [30] Biersteker, T. J., Eckert, S. E., Tourinho, M., & Hudáková, Z. (2018). UN targeted sanctions datasets (1991–2013). *Journal of peace research*, 55(3), 404-412.
- [31] Clayton, G., Dorussen, H., & Böhmelt, T. (2021). United Nations peace initiatives 1946-2015: introducing a new dataset. *International Interactions*, 47(1), 161-180.
- [32] Jetschke, A., & Schlipphak, B. (2020). MILINDA: A new dataset on United Nations-led and non-united Nations-led peace operations. *Conflict Management and Peace Science*, 37(5), 605-629.
- [33] Peace & Security Data Hub. (n.d.). Retrieved September 26, 2022, from <https://psdata.un.org/>
- [34] UN Peace Security Data Hub (2022a). Security Council Data – Vetoes since 1946. <https://psdata.un.org/dataset/DPPA-SCVETOES>
- [35] UN Peace Security Data Hub (2022b). Peacekeeping operations. <https://psdata.un.org/dataset/DPPADPOSS-PKO>
- [36] Hanania, Richard. “The Humanitarian Turn at the UNSC: Explaining the Development of International Norms through Machine Learning Algorithms.” *Journal of Peace Research* 58, no. 4 (July 1, 2021): 655–70. <https://doi.org/10.1177/0022343320929728>.
- [37] Pipino, L. L., Lee, Y. W., & Wang, R. Y. (2002). Data quality assessment. *Communications of the ACM*, 45(4), 211-218.
- [38] Rothman, S. B. (2007). Understanding data quality through reliability: A comparison of data reliability assessment in three international relations datasets. *International Studies Review*, 9(3), 437-456.
- [39] Thakkar, H., Endris, K. M., Gimenez-Garcia, J. M., Debattista, J., Lange, C., & Auer, S. (2016, June). Are linked datasets fit for open-domain question answering? A quality assessment. In *Proceedings of the 6th International Conference on Web Intelligence, Mining and Semantics* (pp. 1-12).
- [40] Purwanto, A., Zuiderwijk, A., & Janssen, M. (2020). Citizens’ trust in open government data: a quantitative study about the effects of data quality, system quality and service quality. In *The 21st Annual International Conference on Digital Government Research* (pp. 310-318).
- [41] Provisional Rules of Procedure | United Nations Security Council. (n.d.). Retrieved September 27, 2022, from <https://www.un.org/securitycouncil/content/rop/chapter-9>
- [42] How can I search for voting information in the UN Digital Library? - Ask DAG! (n.d.). Retrieved September 27, 2022, from <https://ask.un.org/faq/361637>



- [43] Sokol, K., & Flach, P. (2021). You Only Write Thrice: Creating Documents, Computational Notebooks and Presentations From a Single Source (arXiv:2107.06639). arXiv. <https://doi.org/10.48550/arXiv.2107.06639>
- [44] Maathuis, C. (2022). On Explainable AI Solutions for Targeting in Cyber Military Operations. International Conference on Cyber Warfare and Security, 17(1), 166–175. <https://doi.org/10.34190/iccws.17.1.38>
- [45] Maathuis, C. (2022). On the Road to Designing Responsible AI Systems in Military Cyber Operations. European Conference on Cyber Warfare and Security, 21(1), 170–177. <https://doi.org/10.34190/eccws.21.1.204>