Context Identification

Second Presentation

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Outline

Introduction

Introduction

- Lets start off with an example!
- A landed off his bike and fallen awkwardly, B does an initial assessment of the injury and asked "**Can you move your leg?**"
- X is sitting with his legs stretched out in a small walkway, Y is carrying a tray and walking past the place where X is sitting and requests, "**Can you move your leg?**"
- What is the main **difference** here?
- In the local context both means to move the leg, while in the global context it means differently, where one means **an enquiry can the person move his leg as he is injured** while the other is a **request to move the person's leg**.
- Our entire work revolves around this difference and to produce this difference in the required scenario.

Works done till date

The progress of our project over the last few weeks can be summarized mainly into three phases

- IDEATION PHASE
- CODING PHASE
- SHORT PAPER PREPARATION

IDEATION PHASE

Ideation Phase

- Our project planning started with the tag "Thought Vector"/"Improved Text Summarizer", over this period of time we focused on to a single topic, as a result, the tag of project varied to Context Analyzing, Context Modeling and finally Context Identification.
- **Why this change?**

Ideation Phase

- As thought vector predicts the next thought, the input and output associated must be similar. **When are the thoughts said to be similar?**
- Two sentences are said to be similar if they have a set of common properties and feature values which are similar to each other (weights in the case of the neural network).
- If we can identify this features and define a common framework to express these features then probably we can consider it as a context thus the term context modeling.

Ideation Phase

- The term context modeling consist of three pillars
  - **Context Identification and representation**
  - **Context Understanding**
  - **Reasoning from the context**
- Building all these pillars in one go is a huge task, and we intend on doing it pillar by pillar so we currently focus on the Context Identification and representation implementation.
- The ideation phase can be considered to be a never ending process, as we come across new challenges we have to ideate again because of the fact that the number of works in the area is minimal.

CODING PHASE

Coding Phase

- The first step of this phase was to sort out the disadvantages in the existing summarizer models. For that purpose, we coded a summarizer that works on taking the frequencies of words and ranking the sentence. This approach clearly has a disadvantage as it never considers the features or in other words context and only signifies the occurrences of a particular word.

Coding Phase

- The second thing we did was coding the knowledge representation part. We used a graph data structure for this purpose. The coding process was performed on the colab platform. The package nltk was used for tokenizing the words and sentences according to the need. The input sentence/paragraph is given to the online amr server, and from the response received we create a triplet with the help of the penman library and visualize it with the help of neo4j.

Coding Phase

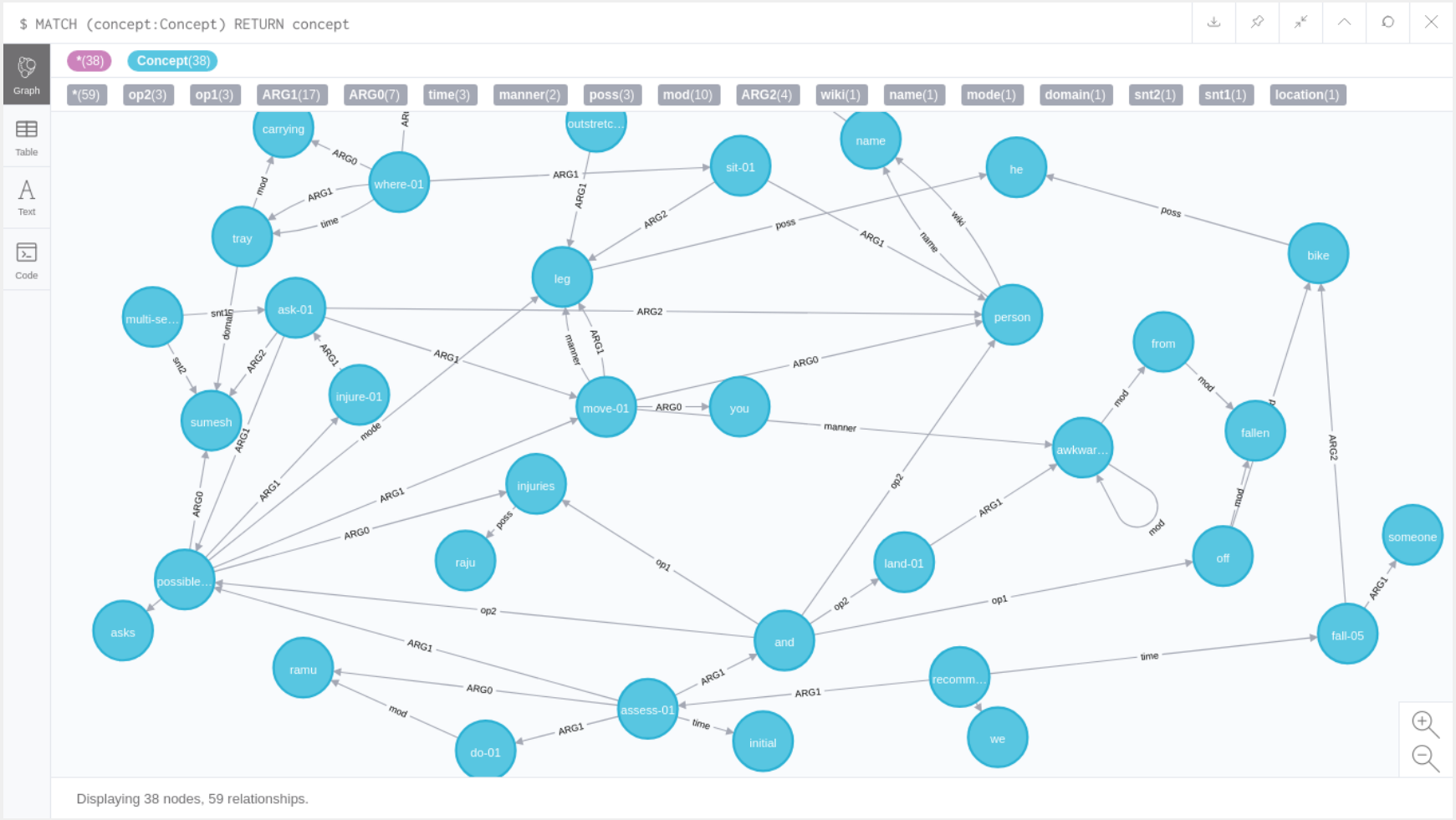

Figure: A part of the Knowledge representation

SHORT PAPER PREPARATION

Short Paper Presentation

- Earlier AIM : ACL
- Dropped due to lack of experimental/result content.
- Current AIM : **7th International Conference on Statistical Language and Speech Processing**
- Deadline : June 1

Work In Progress

Parser Based Local Context Identification

- Grammar and context are interrelated.
- Parser are useful in extracting contextual information in rule based approach.
- For each production, Syntax Directed Definition can be used to identify local context.

Advantages

- Parser are versatile.
- Doesn’t require dataset for testing and training.

Disadvantages

- Describing every rule is tedious.
- Utterances and content in web may not be grammatically structured.

Some Rules

- In an imperative clause, English uses the base form of the verb, without a subject.Imperatives are typically used to express an instruction or command.
- Indicative clauses are used to exchange information in either declaratives, typically expressing a statement (e.g. I am on my way).
- Interrogatives, typically expressing a question (e.g. What do you want?; Are you lost?).
- Functional grammatical description such as actor, agent e.t.c. can be easily determined.

Thank You!