

ePETaLS

Online Annotation Tool for Emotional Text Labeling



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Human Perception, Cognition and Action
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Part I: Automatic sentiment analysis

old annotation for PETaLS

File Edit **Emotion**

Vor Zeiten war ein König und eine Königin, die sprachen jeden Tag: »Ach, wenn wir doch ein Kind hätten.« Aber es geschah, daß die Königin ein Kind bekam. Da trug es sich zu, als die Königin einmal im Bade saß, daß ein Frosch aus dem Wasser ans Land kroch und zu ihr sprach: »Dein Wunsch wird erfüllt werden, ehe ein Jahr vergeht, wirst du eine Tochter zur Welt bringen.« Was der Frosch sprach, geschah, und die Königin gebar ein Mädchen, das war so schön, daß die Königin sich nicht zu fassen wußte und ein großes Fest anstellte. Er lud nicht bloß seine Verwandten, Freunde und Bekannten, sondern auch die weisen Frauen aus dem Reich ein, damit sie dem Kind hold und gewogen wären. Es waren ihrer dreizehn in seinem Reich, weil er ihnen daheim bleiben sollte. Es waren aber nur zwölf goldene Teller hatte, von welchen sie essen sollten, und eine von ihnen daheim bleiben. Das Fest ward gefeiert, und als es zu Ende war, beschenkten die weisen Frauen das Kind mit goldenen Tugenden: die eine mit Tugend, die andere mit Schönheit, die dritte mit Reichtum und so mit allem, was auf der Welt zu wünschen ist. Als elfe ihre Sprüche eben erfüllt hatten, trat plötzlich die dreizehnte herein. Sie wollte sich dafür rächen, daß sie nicht eingeladen war, und ohne jemand zu grüßen oder nur anzusehen, rief sie mit lautem Schrei: »Die Königstochter soll sich in ihrem fünfzehnten Jahr an einer Spindel hängen.« Und ohne ein Wort weiter zu sprechen kehrte sie sich um und verließ den Saal. Alle waren erschrocken, da trat die zwölfte hervor, die ihren Wunsch noch erfüllt hatte, und weil sie den bösen Spruch nicht aufheben, sondern ihn nur mildern konnte, so sagte sie: »Es soll aber kein Tod sein, sondern ein hundertjähriger tiefer Schlaf, in welchen die Königstochter fällt.«

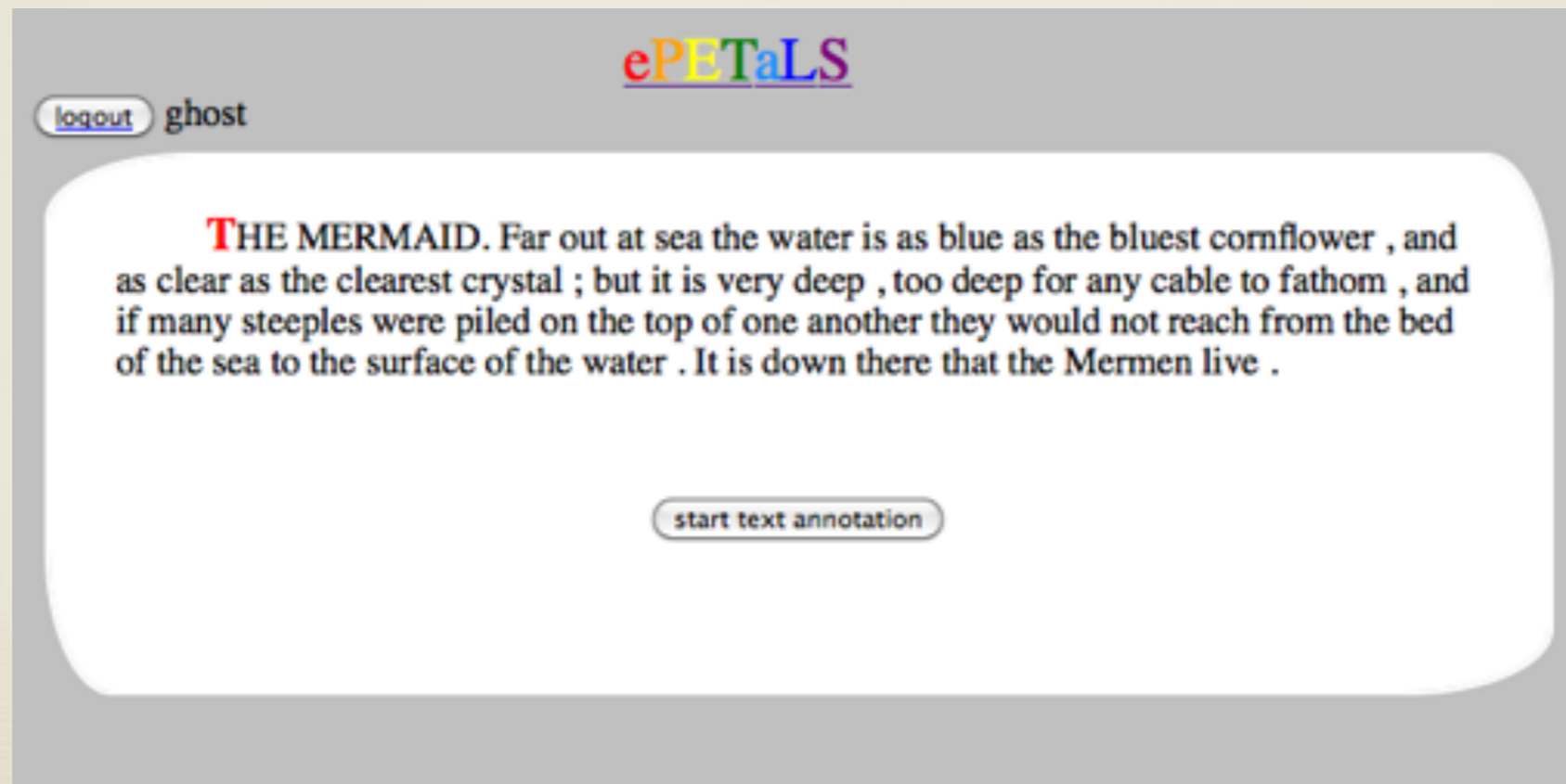
ePETaLS: overview

- * Developed together with Arseniy Mstislavskiy
- * On-line annotation now possible
- * Better view of the work for the annotator
- * Emotion strength
- * Emotional emphasis

ePETaLS: demo



ePETaLS: annotation, cont.



The screenshot displays the ePETaLS web interface. At the top center, the logo "ePETaLS" is shown in a multi-colored font. In the top left corner, there is a "logout" button and the text "ghost". The main content area features a paragraph of text: "THE MERMAID. Far out at sea the water is as blue as the bluest cornflower , and as clear as the clearest crystal ; but it is very deep , too deep for any cable to fathom , and if many steeples were piled on the top of one another they would not reach from the bed of the sea to the surface of the water . It is down there that the Mermen live ." Below the text, there is a "start text annotation" button.

ePETaLS: annotation, cont.

<input type="radio"/> <input checked="" type="radio"/>	Neutral
THE MERMAID.	....
<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	Neutral
Far out at sea	....
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	Joy
the water is as blue	1
<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
as the bluest cornflower ,	....
<input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
and as clear	....
<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
as the clearest crystal ;	....
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
but it is very deep ,	....
<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
too deep for any cable to fathom ,	....
<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
and if many steeples	....
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
were piled on the top of one another	....

as the clearest crystal ;	....
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
but it is very deep ,	....
<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
too deep for any cable to fathom ,	....
<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>
and if many steeples	....
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
were piled on the top of one another	....
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
they would not reach	....
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
from the bed of the sea	....
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
to the surface of the water .	....
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
It is down there	....
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
that the Mermen live .	....
<input type="button" value="check the annotation"/>	

ePETaLS: annotation, cont.

<input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> <input type="radio"/>	and if many steeples	Surprise	2	
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	were piled on the top of one another	Surprise	2	please select the most emotionally-charged word
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	they would not reach	....	....	please select an emotion
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	from the bed of the sea	....	....	please select an emotion
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	to the surface of the water .	....	....	please select an emotion
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	It is down there	Pride	....	please select the most emotionally-charged word force can't be empty for a non-neutral emotion
<input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>	that the Mermen live .	Pride	....	please select the most emotionally-charged word force can't be empty for a non-neutral emotion

ePETaLS: annotation, cont.

Structure of the initial .xml file:

- * meta data
- * full text
- * word tokens
- * phrases (word tokens IDs)
- * sentences (phrase IDs)
- * paragraphs (sentence IDs)

ePETaLS: annotation, cont.

Structure of the resulting .xml file:

- * meta data
- * for each phrase:

```
<phrase ID="ph4">  
  <emo ID="e4" category="Amusement"/>  
  <focusWordRef tokID="tokI7"/>  
  <force ID="f4" value="1"/>  
</phrase>
```

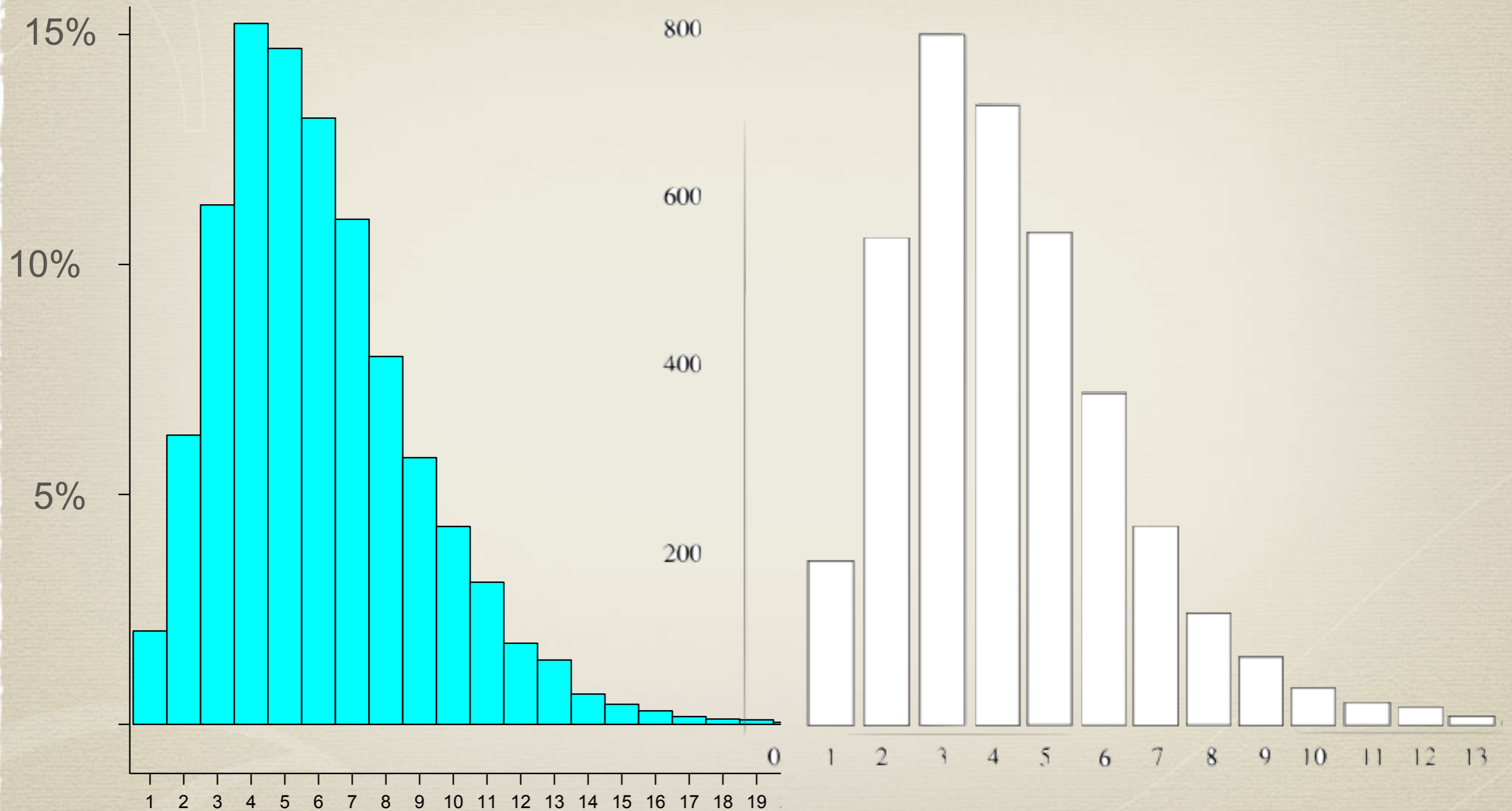
Part II:

Automatic intonational phrase break prediction

Intonational phrases: corpus collection

- * Previous text segmentation system was suboptimal
- * Prosodic pauses from recordings (80 ms.)
- * Small corpus of manually segmented texts
- * High correlation between:
 - * audio recordings (“read the story out loud”)
 - * cognitive task (“imagine reading the story out loud”)

Phrase length distribution



Phrase length

Adapted from: Sanders, E, and P A Taylor. "Using Statistical Models to Predict Phrase Boundaries for Speech Synthesis."(1995).

Features for the automatic prediction system

- * Lemma
- * POS
- * Dependency parsing
- * Named entity
- * Direct speech
- * Binary Class label: before phrase boundary or not

Results

* Human:

There was once
a little farmer
and his wife
living near Coolgarrow.
They had three children,
and my story happened
while the youngest was a baby.

* Machine:

There was once a little farmer
and his wife
living near Coolgarrow.
They had three children,
and my story happened
while the youngest
was a baby.

ePETaLS: Future Work

- * Integrate automatic text segmentation into ePETaLS
- * Time logging for annotation processes
- * User friendliness
- * English corpus collection
- * Your suggestions :)

Part III:
“To infinity...
and beyond!”



My Motivation

Manual human work:



Text segmentation

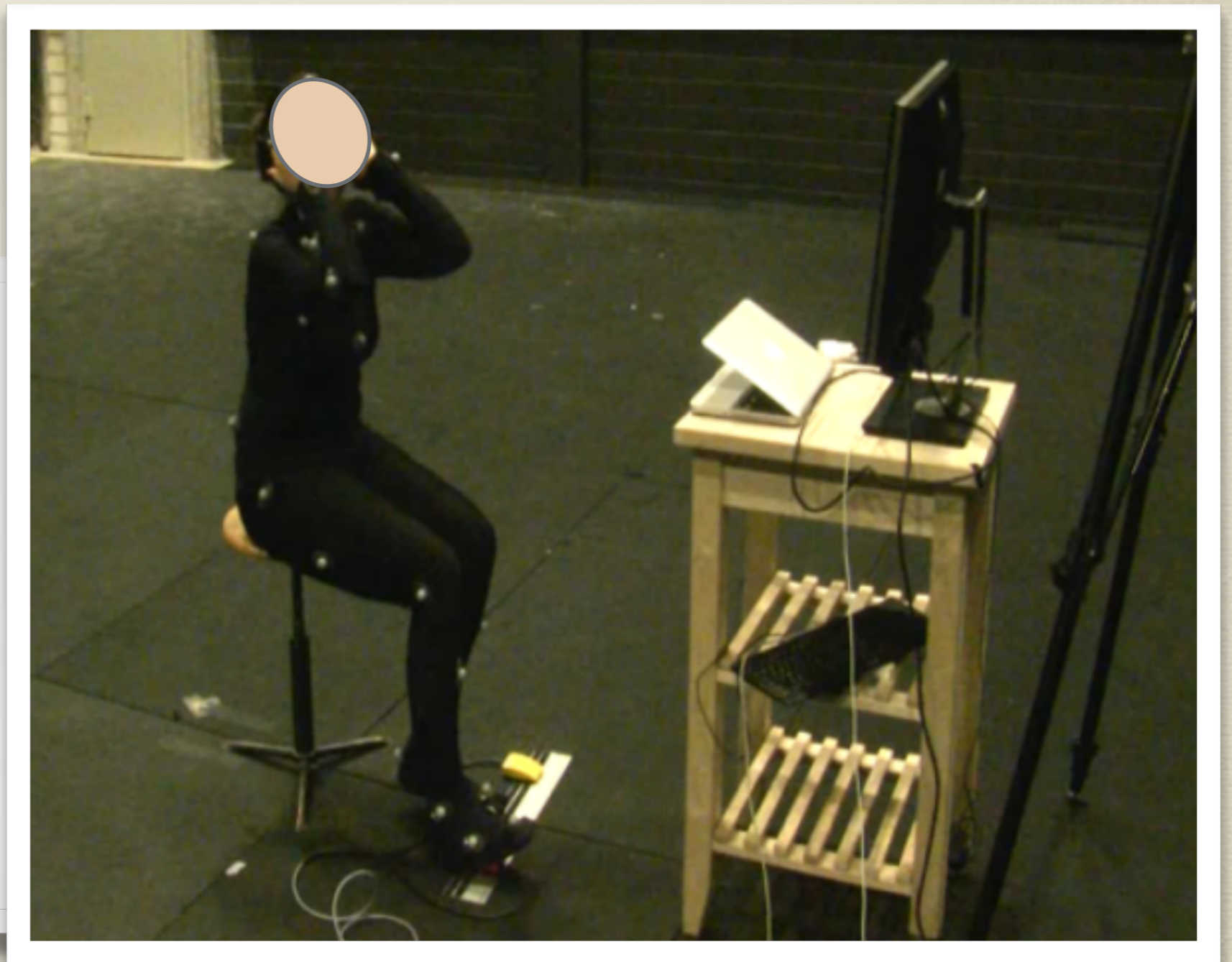
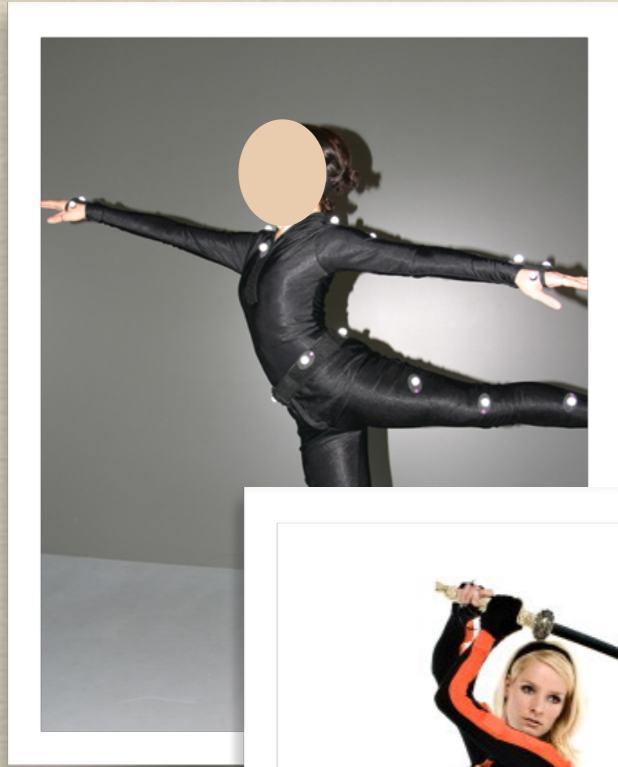
Annotation for emotions

Acting the story out

Automatic system:



Motion Capture

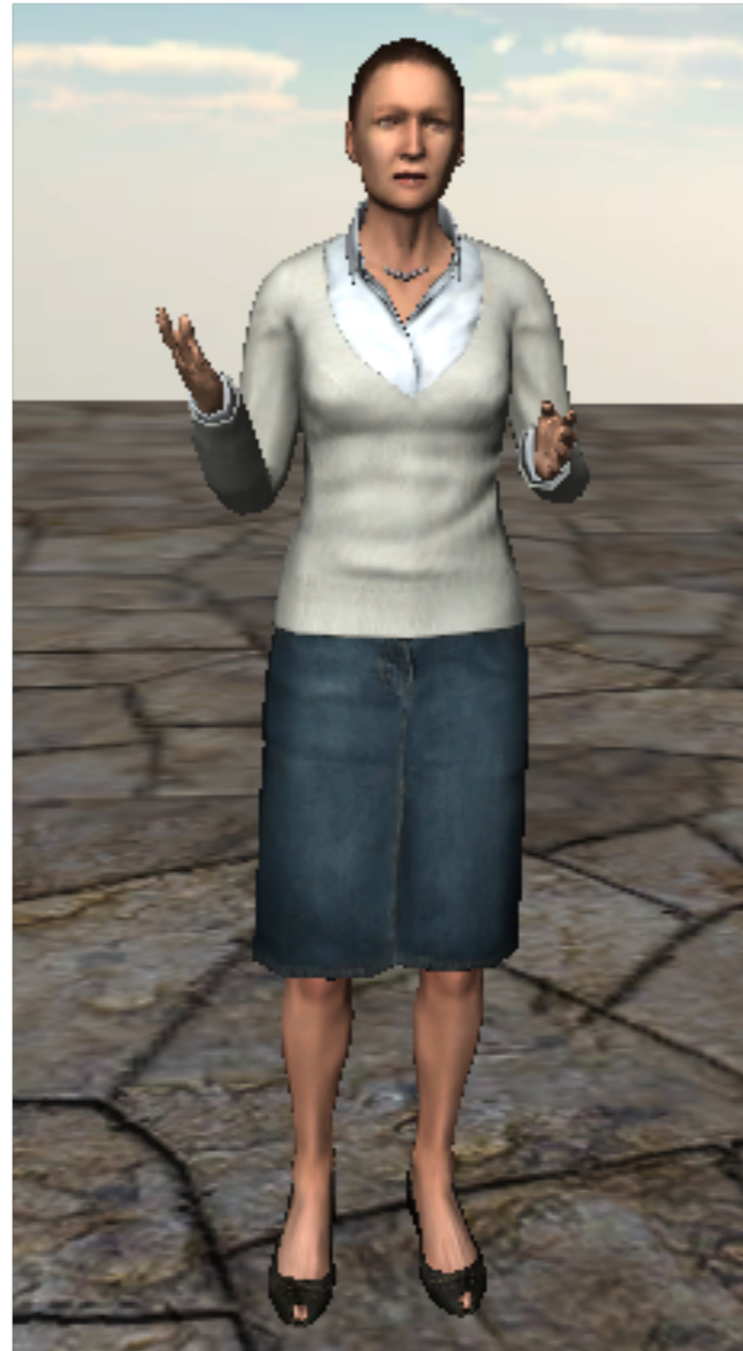


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Virtual Actors



Conclusions

My final goal is to have plain text as input and a realistic virtual actor as output:

1. Input text goes through a pipeline of NLP tools
2. Is segmented into intonational phrases
3. Annotated for emotions
4. "Actor script" triggers animation generator and TTS.

“and they lived happily ever after”

Thank you for your attention!

