Ron the Death Eater: Plotting characterization from canon to fanfiction

Michael Miller Yoder, Qinlan Shen, James Fiacco & Carolyn Rosé
Can we measure how entities are being represented differently in related texts?
Can we measure shifts in how characters are presented from original media to fanfiction?
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Fanfiction

- Fan-written stories based on original books, movies, TV shows, comic books, etc
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- Popular since at least the 1970s, now online on sites such as Fanfiction.net and Archive of Our Own (AO3)
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- Popular since at least the 1970s, now online on sites such as Fanfiction.net and Archive of Our Own (AO3)
- Focus on secondary characters, female characters (Milli and Bamman 2016)
Word embeddings
Word embeddings

- Numeric vector representations of words from a corpus (Mikolov et al. 2013)
Word embeddings

- cat: [0.31, 0.24, 0.07, 0.65 ...]
- dog: [0.37, 0.29, 0.06, 0.63 ...]
- presentation: [0.65, 0.93, 0.16, 0.78 ...]
- poster: [0.57, 0.82, 0.21, 0.73 ...]

- Numeric vector representations of words from a corpus (Mikolov et al. 2013)
Word embeddings

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- Similar to LSA (Deerwester et al. 1990), LDA (Blei et al. 2003)

<table>
<thead>
<tr>
<th>Word</th>
<th>Vector Representation</th>
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</thead>
<tbody>
<tr>
<td>cat</td>
<td>[0.31, 0.24, 0.07, 0.65 ... ]</td>
</tr>
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</tr>
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</table>
Word embeddings

- Numeric vector representations of words from a corpus (Mikolov et al. 2013)
- Semantically "similar" words will have "similar" vectors, appear in similar contexts
Word embeddings

- Predict a word from its context (training embeddings)
Word embeddings

Noam Chomsky was certainly someone.

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  - Analyze stereotypes and bias in corpora (Garg et al. 2018)
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Can word embeddings capture the framing of characters in fanfiction?
Methodological options
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- Embedding space construction
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- Embedding space construction
  - Build a combined embedding space
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  - Align embedding spaces
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  - Align embedding spaces
- Need story-specific embeddings for characters
  - Average word embeddings in context window around mentions of a character name
  - Learn contextualized embeddings (Peters et al. 2018, Devlin et al. 2018)
Data
Data from AO3

Harry Potter fics

- Large, book-based fandom
- Selected fics with 1k-5k words
- 42,792 fics
Experiments
Character representations

- Goal: Build a representation for each character in each fic to compare with that character's representation in canon
Trained canon and fanfiction embedding spaces separately
Trained canon and fanfiction embedding spaces separately, then aligned to a unified "background" space (Mikolov et al. 2013b)
Hermione sat in the front of the classroom. She...

Fleur whistled softly. "Hermione! Come here..."
Character representations

- 

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Character representations

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- Finish with a fic-specific vector representation for each character

Hermione sat in the front of the classroom. She...

Fleur whistled softly. "Hermione! Come here..."
Results
Canon vector is close to the center of the fanfiction vectors
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Canon vector is on the edge of fanfiction vectors.
Canon vector is close to the center of the fanfiction vectors: **harry**

Canon vector is on the edge of fanfiction vectors: **draco, remus, sirius**
Representation for Ron
Representation for **Ron**

Differences when cast in a canon relationship vs. when excluded
Example fic with **Hermione** representation close to canon

"...His new friends’ names were Ron Weasley and **Hermione** Granger"

"...scored high in maths before high school, **Hermione** was good at everything...."
Qualitative evaluations

- Fic with Hermione representation far from canon

"Draco," the brunet groaned, "Will you stop referring to Ron and Hermione like that?" "Why can't we use Smith because she was Hermione's Mediwitch?..."
Qualitative evaluations

- Fic with **Hermione** representation far from canon

> I hope you (whoever you are) can get this to ... **Hermione** Granger so that they can do whatever it is you do with a will...
Conclusion

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  - See evidence of differences in characterization, relationships
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  - See evidence of differences in characterization, relationships
- Differences match intuitive senses of corpora
  - Though can just be surface-level discourse differences
Ongoing work

- Different dimensions of narrative relevant to characterization: quotes, narration, etc
- How are norms around gender and sexuality communicated through character representation?
- How do writers signal character divergence from canon?
Thanks!

Questions?
Relationship representations

<table>
<thead>
<tr>
<th>Approach</th>
<th>Feature Set</th>
<th>Canon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majority</td>
<td>–</td>
<td>52.40</td>
</tr>
<tr>
<td>Unigrams</td>
<td>F ‘</td>
<td>55.30</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>62.04</td>
</tr>
<tr>
<td></td>
<td>A + Q</td>
<td>63.00</td>
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<tr>
<td>Shared</td>
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<td>67.86</td>
</tr>
<tr>
<td></td>
<td>A + Q</td>
<td>68.52</td>
</tr>
<tr>
<td>Aligned</td>
<td>A</td>
<td>65.06</td>
</tr>
<tr>
<td></td>
<td>A + Q</td>
<td>64.35</td>
</tr>
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F: full text, A: assertions, Q: quotes, Canon: indicates the prediction task of predicting whether a relationship is presented in the same romantically as canon.