Exposing Twitter Users to Contrarian News

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Visit the demo at: https://users.ics.aalto.fi/kiran/reducingControversy/homepage/

1. Motivation
- Polarization on social media
- Echo chambers
- Can we visualize the echo chambers?
- Can we reduce the polarization?

2. Setting
- Twitter
- Retweets
- Endorsement graph
- Directed, topic-specific

3. Background

a. User Polarity score

b. Acceptance Probability
- An edge won’t always get accepted we model probability of acceptance based on user polarity
- \( p(u, v) = p(\text{edge is present} | \text{polarity of } u, \text{polarity of } v) \)
- Estimated using: \( N_{\text{endorsed}}(R_u, R_v) / N_{\text{exposed}}(R_u, R_v) \)

Based on retweets
Based on connections

4. Recommendation factors
L1. Reduction in user polarity (best recommendations to reduce user polarity)
L2. Acceptance probability (probability that a user likes a recommendation)
L3. Exclusivity on either side (articles that are exclusively shared by one side)
L4. Topic diversity (present diverse topics than what a user has already read)
L5. Popularity (present popular content to the user)

5. Combining the factors
- Merge the 5 ranked lists
- Weighted Rank aggregation

\[
\phi(\delta) = \sum_{i=1}^{5} w_i d(\delta, L_i)
\]

8. Demo functionality
1. Visualising polarized networks
2. Click on a node to see contrarian news recommendations
3. Get reasons for the recommendations

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