

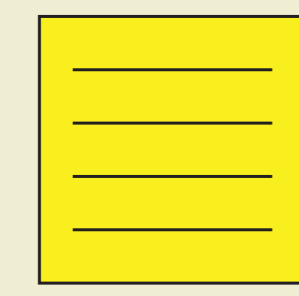
Authorship Attribution with Author-aware Topic Models

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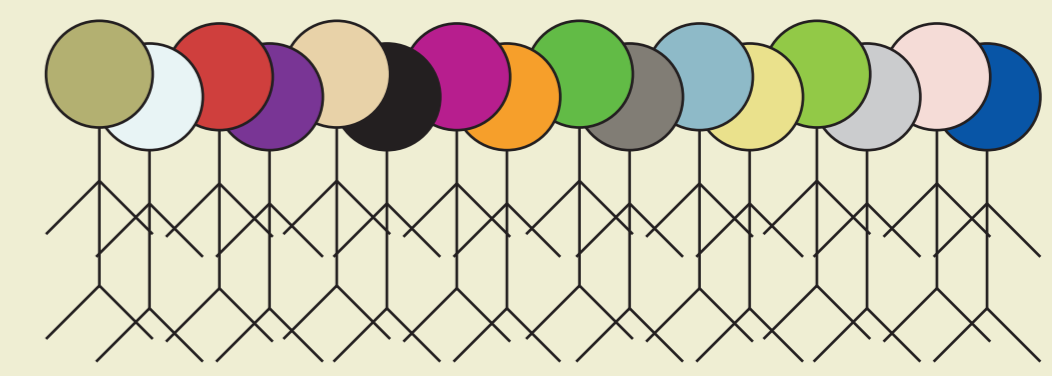
In a sentence

Extending our work on authorship attribution with Latent Dirichlet Allocation (LDA), we employ author-aware topic models to obtain state-of-the-art performance in scenarios with two to 19,320 candidate authors.

Authorship attribution: identifying the authors of anonymous texts (supervised classification)



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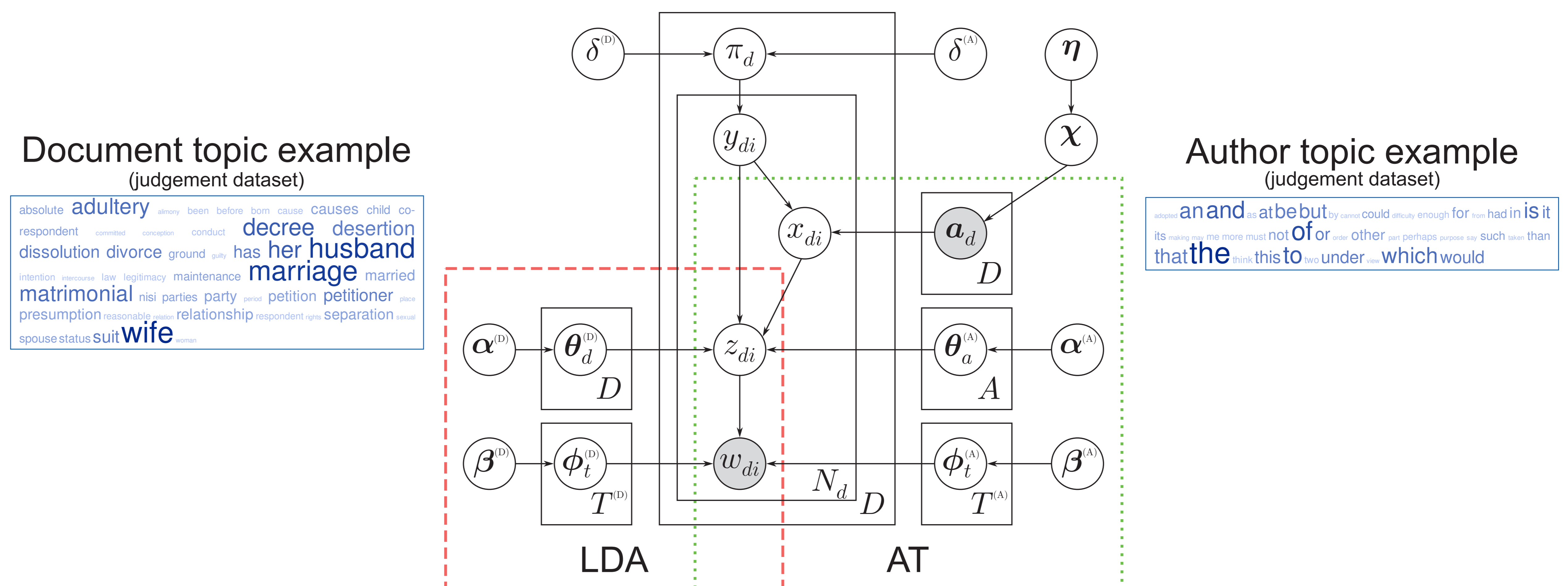


Contributions

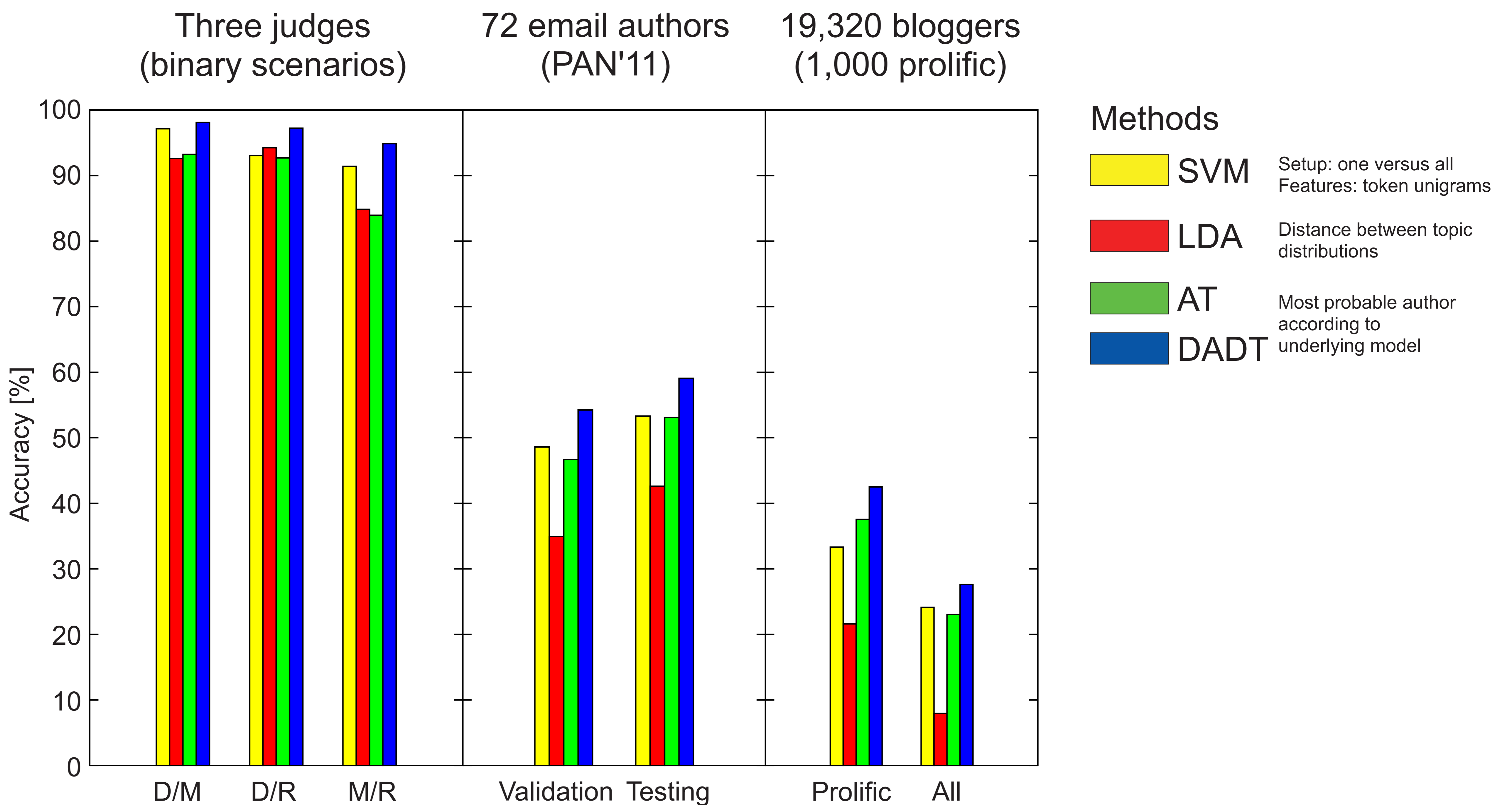
- Application of previously-suggested Author-Topic (AT) model
- Our Disjoint Author-Document Topic (DADT) model
- Reviewer identification study (in technical report)

DADT

Combines LDA and AT to separate document and author words into document and author topics



Results



Reviewer Identification

- Training: 18 reviewers from small track, 10 publications per reviewer (mostly multi-authored)
- Testing: 19 reviews by 9 reviewers (obtained with permission)
- Accuracy: AT: 7/19 (@5: 12/19); DADT: 10/19 (@5: 16/19)

Conclusion

- Author-aware topic models obtain competitive authorship attribution results
- DADT's separation of document and author words is suitable for authorship attribution
- Tentatively: reviewers can be identified based on public information (requires further study)
- Future extensions include: additional features, semi-supervised learning, and DADT-SVM ensemble