Capstone: Is A Nobel Prize Winner the Author of This Abstract?

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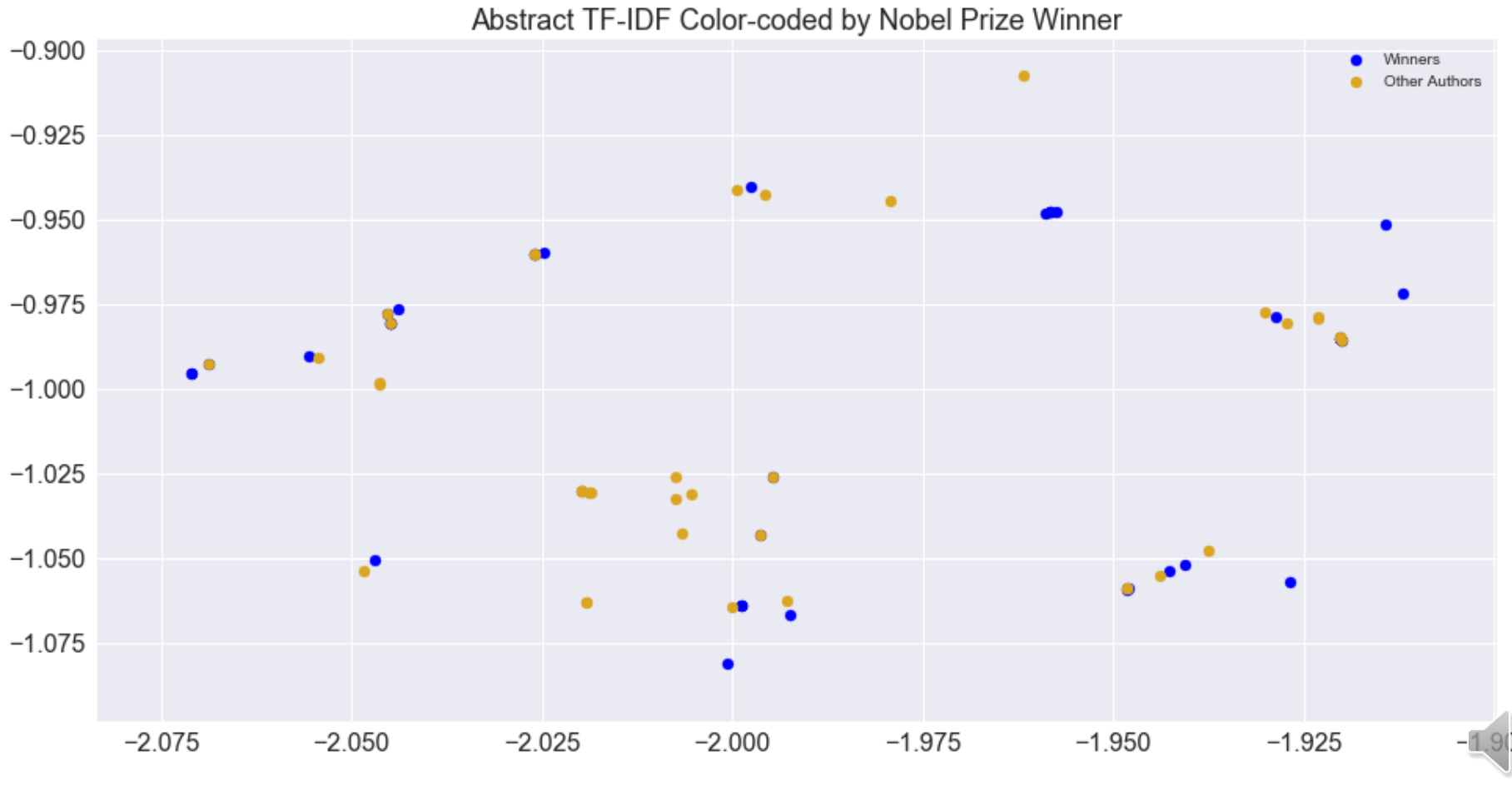
Dataset

- Author information from Google Scholar
- List of five publications
- Authors listed on those publications
- First five publications associated with them
- 84 records had abstracts
- Mostly even mix of Nobel Prize science fields

Abstract text color-coded by field

Abstract text by searched author

Abstract text by winner



Model Results

- Field had a low accuracy: 17% and loss barely improved from 1.381 to 1.378
- Prize-winning authors' abstracts were found to be significantly different
- Modeling for that classification had a 42% test accuracy, after improving the training accuracy from 41% to 57%
- The loss for the latter decreased by 0.006

Takeaways

- Abstract text from different fields can be more similar than those from the same field
- Even different publications by the same author do not have abstracts that are closely related
- There are more publication abstracts for non-winners

Future Areas of Interest

- Networks of collaborators
- Text analysis for the jargon in one field
- Improved matching of author names to publications
- University/affiliation data

Thank You

Credit to the original scholarly package, which can be installed from https://pypi.org/project/scholarly/

Github: https://github.com/bronwencc/Capstone/

Many thanks to Jeff Herman, who guided and encouraged me incredibly tactfully and reasonably.

Additional Information

- Half of recent Nobel Prize winners do not have Author pages on Google Scholar that list their publications
- Abstracts may be excerpts from books instead of journal articles
- Used term frequency-inverse document frequency to analyze all abstract text
- The TF-IDF averages went into a multilayered sequential model