

# **To Get Credit or Not to Get Credit**

An Analytical Approach to Authorship

--by Tom Zwiller--





# Background

- William Shakespeare aka 'The Bard' (1564-1616)
  - Authored 38 plays, 130+ sonnets
  - Focused on Tragedies, Comedies and History
  - Owned the Globe Theatre

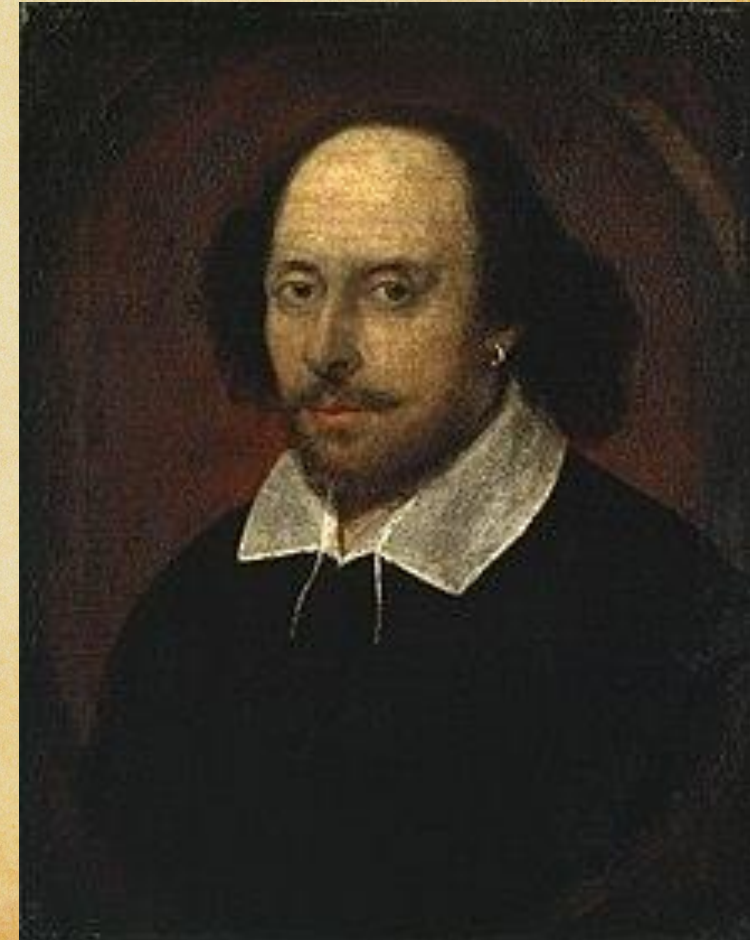


Image Source: Wikimedia Foundation. (2025, February 26). *William Shakespeare*.

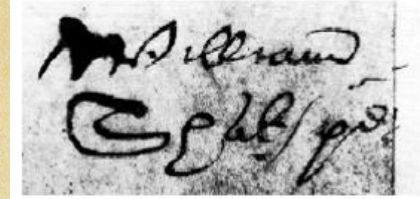
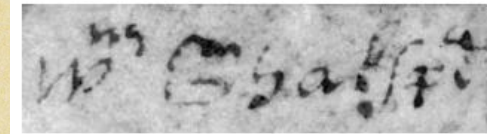
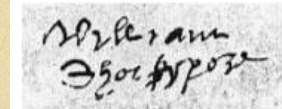
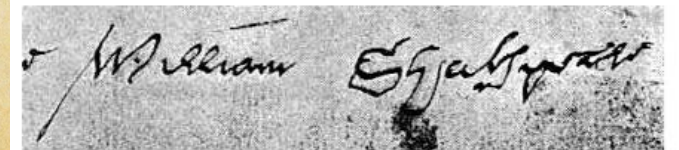
Wikipedia. [https://en.wikipedia.org/wiki/William\\_Shakespeare](https://en.wikipedia.org/wiki/William_Shakespeare)



# Tis a quick lie, sir

Despite Shakespeare's extensive works, scholars have questions

- Education, Literacy, Funeral/Will
- Plays with contested authorship:
  - Henry VI Part 1 (Folger Shakespeare Library)
  - Edward III (Encyclopædia Britannica)
  - Arden of Feversham (Encyclopedia.com)

A close-up of a handwritten signature in cursive script, appearing to read "William Shakespeare".A close-up of a handwritten signature in cursive script, appearing to read "William Shakespeare".A close-up of a handwritten signature in cursive script, appearing to read "William Shakespeare".A close-up of a handwritten signature in cursive script, appearing to read "William Shakespeare".A close-up of a handwritten signature in cursive script, appearing to read "William Shakespeare".A close-up of a handwritten signature in cursive script, appearing to read "William Shakespeare".



# Though this be Madness, There is Method

- Collected 40 Shakespeare plays, 7 Marlowe plays
  - Removed plays with contested authorship
- Trained SVM Model, which can outperform XGBoost<sup>1</sup>

1. Boran, T., Martinaj, M., & Hossain, M. S. (2020, June 20). *Authorship Identification on Limited Samplings*. Computers & Security.

<https://www.sciencedirect.com/science/article/abs/pii/S0167404820302194>





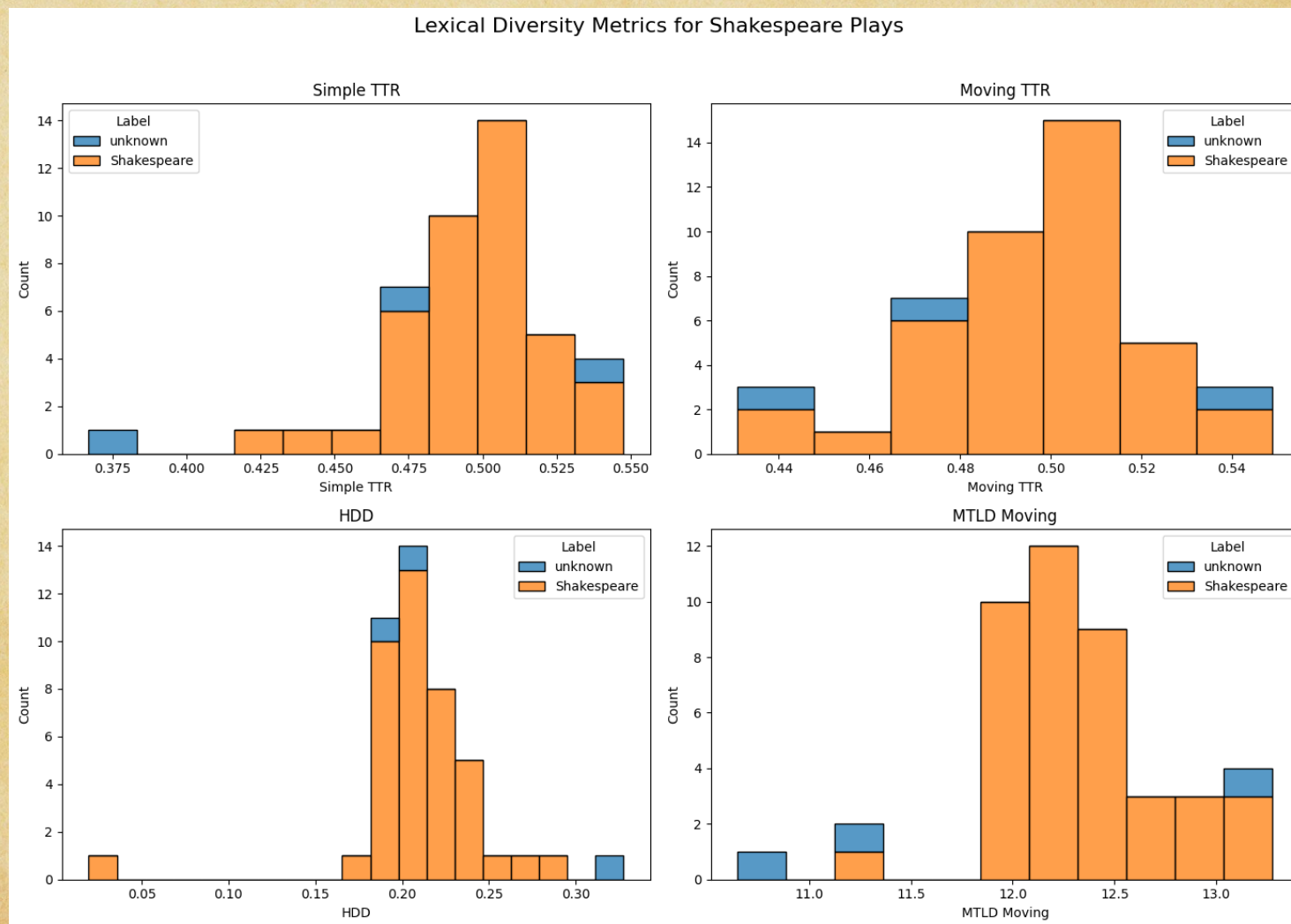
# Much Ado About Nothing?

- The SVM Model was able to predict the test set and unknowns

Play Analyzed	% of Shakespeare Authorship
Shakespeare Test Average	97.92%
Marlowe Test Average	14.25%
<u>Henry VI Part 1</u>	<b>83.2%</b>
<u>Arden of Feversham</u>	<b>79.5%</b>
<u>Edward III</u>	<b>78.2%</b>

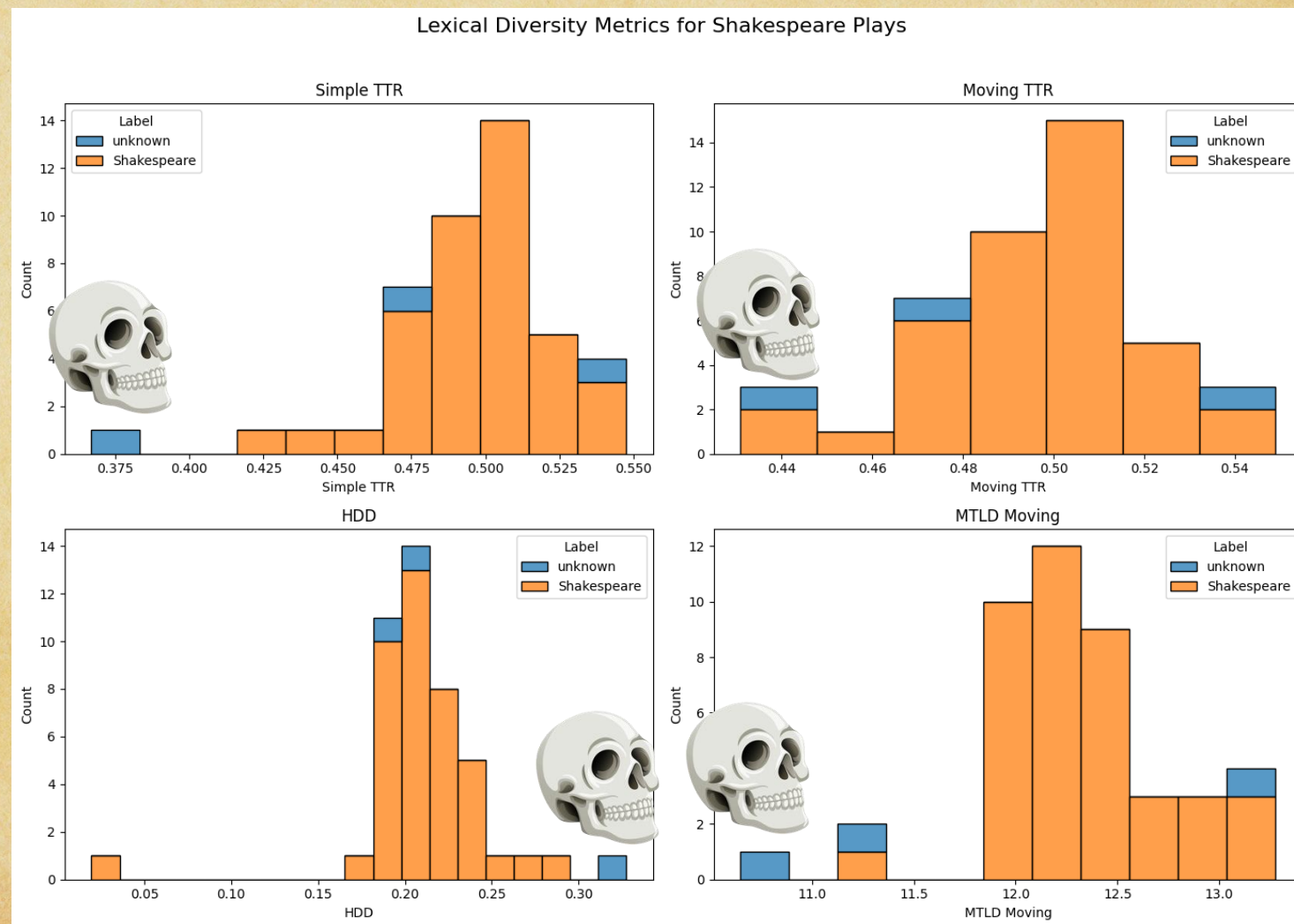


# Shall I Compare Thee...?





# Shall I Compare Thee...?





# All's Well That Ends Well

- No definitive proof Shakespeare didn't author his plays
  - However, there is reason to think there was co-authorship
    - SVM Model predicted lower than expected chances
    - Lexical Diversity was largely normal

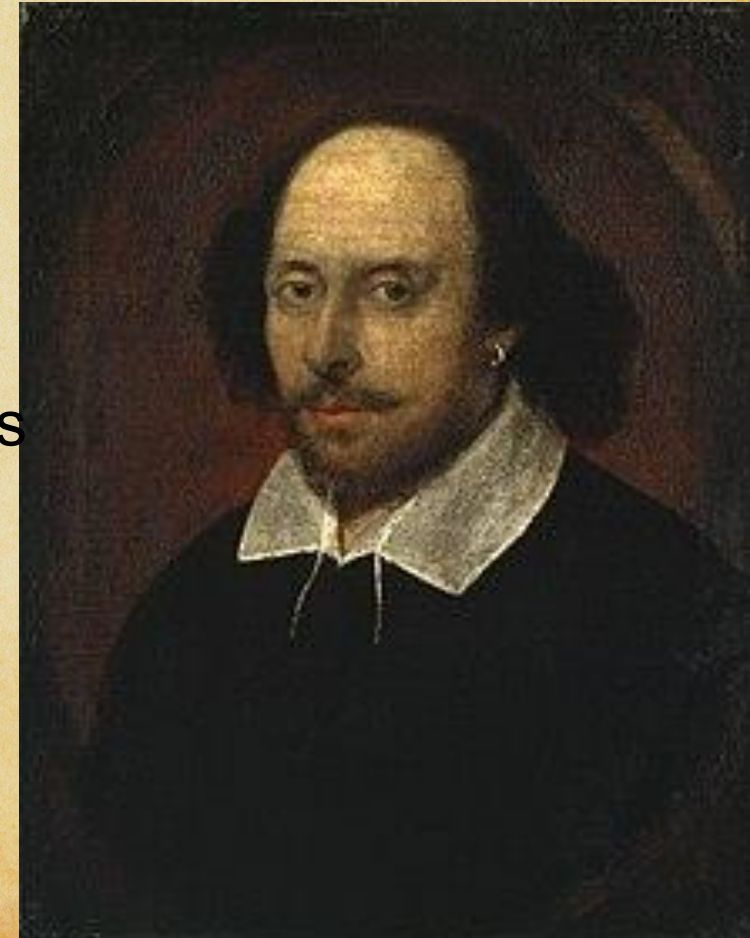


Image Source: Wikimedia Foundation. (2025, February 26). *William Shakespeare*.

Wikipedia. [https://en.wikipedia.org/wiki/William\\_Shakespeare](https://en.wikipedia.org/wiki/William_Shakespeare)

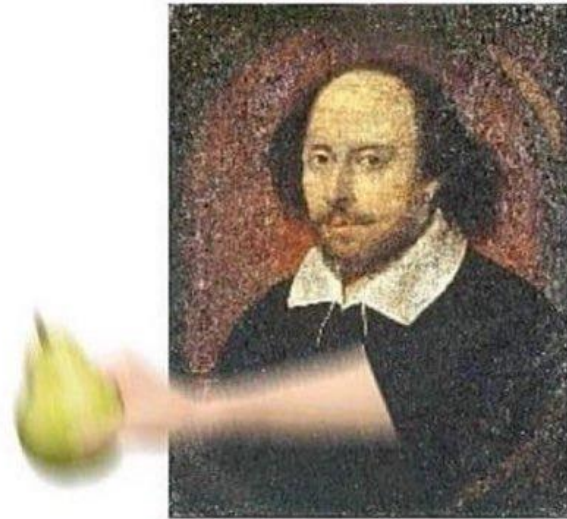




William



Pear



William Shakespeare



# Sources

*Appendix: Authorship of Henry VI, Part 1*. Folger Shakespeare Library. (n.d.).

<https://www.folger.edu/explore/shakespeares-works/henry-vi-part-1/appendix-authorship-of-henry-vi-part-1/>

Boran, T., Martinaj, M., & Hossain, M. S. (2020, June 20). *Authorship Identification on Limited Samplings*.

Computers & Security. <https://www.sciencedirect.com/science/article/abs/pii/S0167404820302194>

Encyclopædia Britannica, inc. (n.d.). *Edward III*. Encyclopædia Britannica. <https://www.britannica.com/topic/Edward-III-play-by-unknown-author>

Encyclopedia.com. (2025, February 28). *Arden of Faversham*. Encyclopedia.com.

<https://www.encyclopedia.com/arts/educational-magazines/arden-faversham>

Wikimedia Foundation. (2025a, February 23). *Shakespeare Authorship Question*. Wikipedia.

[https://en.wikipedia.org/wiki/Shakespeare\\_authorship\\_question](https://en.wikipedia.org/wiki/Shakespeare_authorship_question)

Wikimedia Foundation. (2025, February 26). *William Shakespeare*. Wikipedia.

[https://en.wikipedia.org/wiki/William\\_Shakespeare](https://en.wikipedia.org/wiki/William_Shakespeare)

