Project Syllabus

Student: Ojas Chaturvedi
Project Title: Shooting Through the Text: Uncovering Sentiments in Congressional Gun Legislation
Location: BASIS Chandler
BASIS Advisor: Dr. Travis May
On-Site Advisor: Professor Hua Wei
On-Site Advisor Contact Information: hua.wei@asu.edu; +1-602-543-5652; BYENG 486, 699 S Mill Ave, Tempe, AZ 85281

Course Goals:

This project has two main objectives: This project has two primary objectives: Firstly, it aims to conduct a comprehensive sentiment analysis of gun control legislation introduced in the U.S. Congress between the 107th and 118th sessions (2001-2024). This analysis will involve categorizing bills into pro-gun rights and pro-gun control stances based on the emotional tones and framing strategies present in the legislative language. Secondly, it seeks to investigate how different sides frame the issue of gun control through an in-depth understanding of the language and tone used in the legislation. This will provide insights into how lawmakers convey their messages on this contentious issue and how the public might perceive the bills. Through these objectives, the project aims to enhance our understanding of the emotional dimensions of gun control legislation and contribute valuable insights to the field of legislative analysis.

Course Texts:

[1] O. Pichardo-Lagunas, B. Martinez-Seis, M. Hidalgo-Reyes, and S. Miranda, "Automatic detection of opposition relations in legal texts using sentiment analysis techniques: A case study," *Acta Polytechnica Hungarica*, vol. 19, no. 10, pp. 165-184, 2022. doi: 10.12700/aph.19.10.2022.10.10

[2] E. Laschever and D. S. Meyer, "Growth and decline of opposing movements: Gun control and gun rights, 1945-2015*," *Mobilization: An International Quarterly*, vol. 26, no. 1, pp. 1-20, Mar. 2021. doi: 10.17813/1086-671x-26-1-1

[3] A. Yadav, A. Patel, and M. Shah, "A comprehensive review on resolving ambiguities in Natural Language Processing," *AI Open*, vol. 2, pp. 85-92, 2021. doi: 10.1016/j.aiopen.2021.05.001

[4] S. Zhang, "Sentiment classification of news text data using Intelligent Model," *Frontiers in Psychology*, vol. 12, Sep. 2021. doi: 10.3389/fpsyg.2021.758967

[5] Y.-H. Liu and Y.-L. Chen, "A two-phase sentiment analysis approach for judgement prediction," *Journal of Information Science*, vol. 44, no. 5, pp. 594-607, Jul. 2017. doi: 10.1177/0165551517722741

[6] A. C. Müller and S. Guido, Introduction to Machine Learning with Python: A Guide for Data Scientists. Sebastopol: O'Reilly Media, 2016.

[7] A. Burkov, The Hundred-Page Machine Learning Book. Orlando, FL: Andriy Burkov, 2023.

Project Product Description:

I will produce a 4000-5000 word research paper that conveys the results and insights derived from my multi-model sentiment analysis of congressional gun control legislation introduced in the U.S. Congress during the 107th to 117th sessions (2001-2023). Additionally, I will deliver a 15-20 minute oral presentation to effectively communicate the key findings and methodology of my research. Furthermore, I will create an interactive website for users to upload their own congressional gun legislation and experience the sentiment analysis process firsthand. In addition, extensive documentation detailing the entire project will be provided for reference.

Weekly Schedule:

You must have reading assignments and tasks for each week. Be sure to also include the time table for your Project Product in your weekly schedule. You will need to work with both your BASIS advisor and your On-site advisor to complete this. We understand that you may have to revise this as you go.

To be clear, be sure to include both the work you will be performing in your internship and whatever independent research and work you will be performing in any given week.

If you do not know the specific tasks you will be performing from week-to-week during your internship, that's OK for now, but you must talk to your internship advisor as soon as possible and be as detailed as you can be.

Note: Internship-specific tasks are not finalized yet.

Week 1:
- NLP Project Tasks
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Week 2:
- NLP Project Tasks
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Week 3:
- NLP Project Tasks
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Week 4:
- NLP Project Tasks
  -

Week 5:
- NLP Project Tasks
  -

Week 6:
- NLP Project Tasks
  -

Week 7:
- NLP Project Tasks
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Week 8:
- NLP Project Tasks

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You should start work on your final product here.

- NLP Project Tasks
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Week 9:

- NLP Project Tasks
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Week 10:

- NLP Project Tasks
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Week 11:

- NLP Project Tasks
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Week 12: Final product should be completed.

- NLP Project Tasks
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Final presentations given on Saturday, May 4, 2023.