NoCap: Fact Checking with AI Milestone 5

Anthony Ciero, Joshua Pechan, Varun Doddapaneni, Thomas Chamberlain
Faculty Advisor: Professor Silaghi

Milestone 5 Matrix

Task	Completion	Thomas	Anthony	Josh	Varun
1. Continue prompt engineering for more consistent results	90%				100%
2. Create graphs/visualizations for collected data	80%	70%			30%
3. Add accessibility features	100%		100%		
4. Connect reports to database for user viewing	100%			100%	
5. Create poster for senior design showcase	80%	5%	85%	5%	5%

Continue prompt engineering for more consistent results

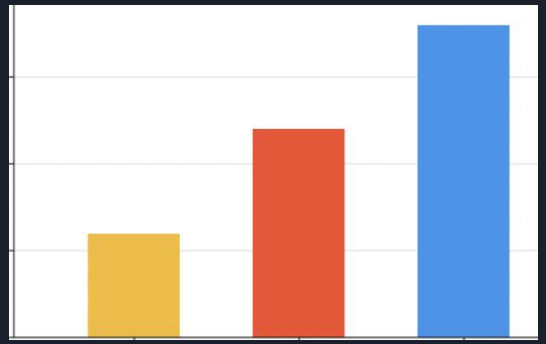
- Improved prompting to ensure dates are consistent
- Tweaked prompts to reduce scores further for each incorrect/inaccurate claim
- Model now scrutinizes articles further

Create graphs/visualizations for collected data

Our two graphs provide key metrics from the article reports providing more insights. The graphs are created below the summary on the report page.

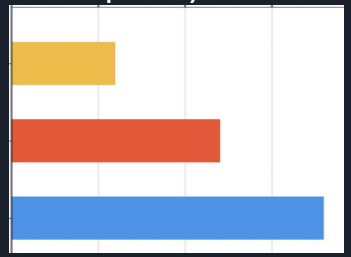
Article Claims-bar chart

- The first visualization shows the users Correct, Incorrect, and partially correct claims made in the article by the author

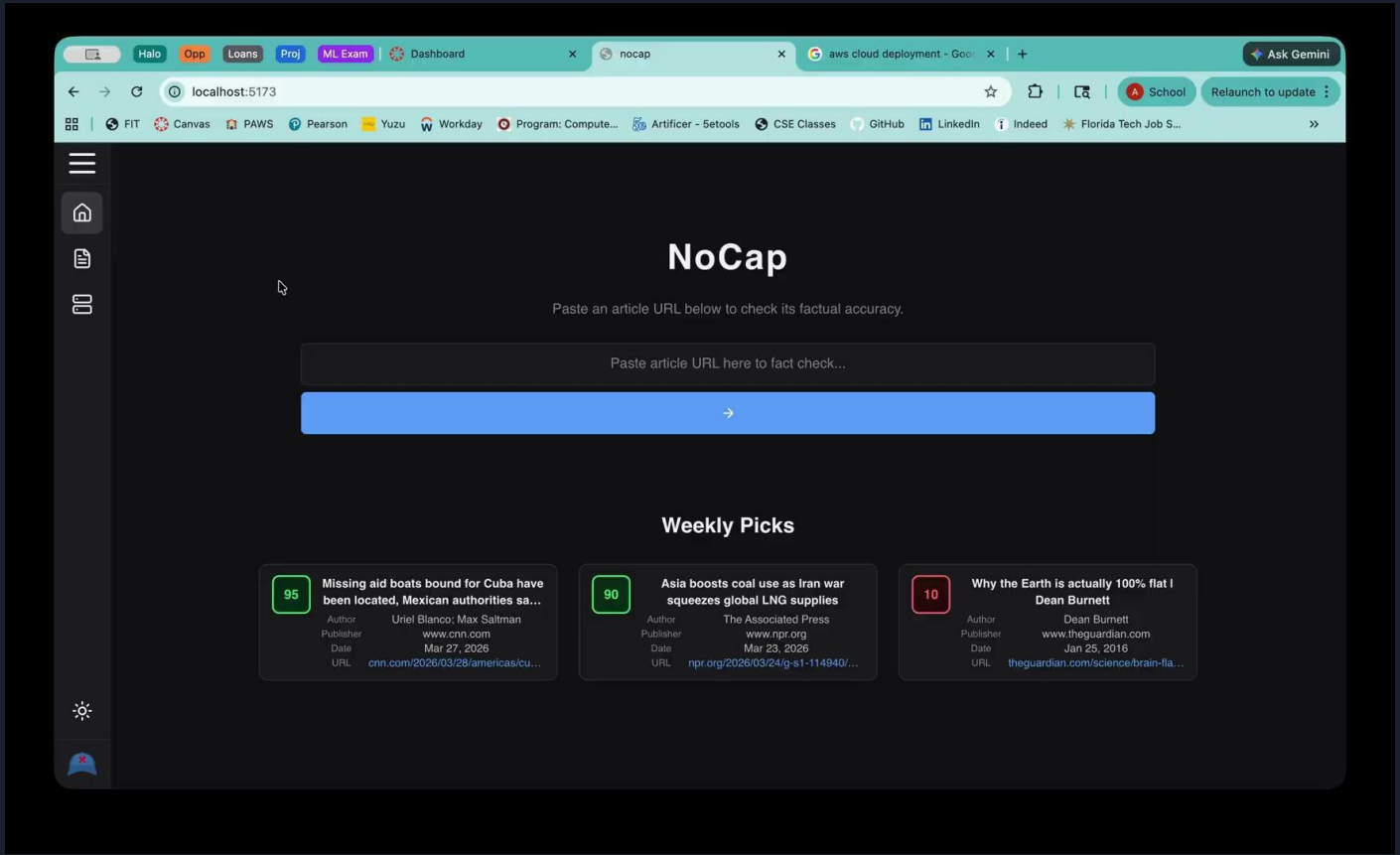


Adjectives of People Horizontal bar chart

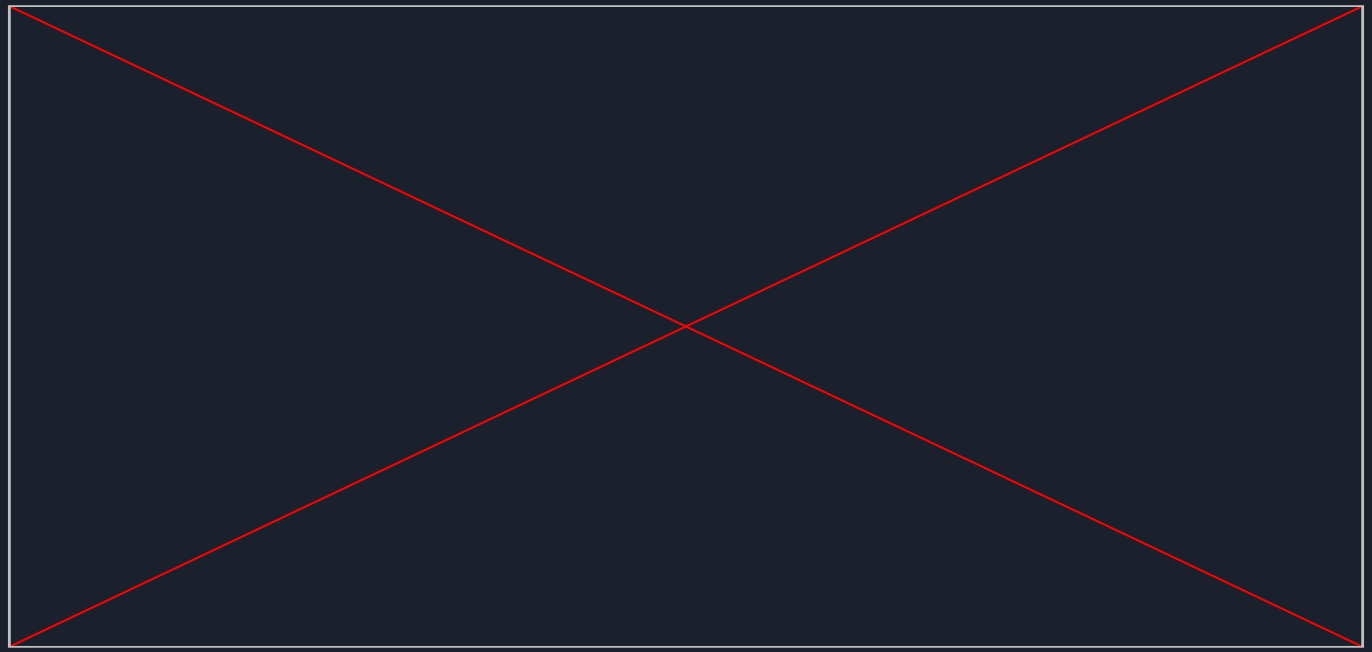
- Graph showing adjectives/descriptors of people and entities
- Each adjective labeled as positive(green), negative(red), or neutral(yellow)
- Y-axis: descriptors
- X-axis: frequency



Add accessibility features



Connect reports to database for user viewing



Create poster for senior design showcase

NORTHROP GRUMMAN
ENGINEERING & SCIENCE
STUDENT DESIGN SHOWCASE
FLORIDA TECH

NoCap: Fact-Checking with AI

Thomas Chamberlain, Anthony Ciero, Varun Doddapaneni, Joshua Pechan
Faculty Advisor(s): Dr. Marius Silaghi, Dr. Philip Chan, Dept. of Electrical Engineering and Computer Science, Florida Institute of Technology

Motivation/Goal

- Fact checking media is important for properly obtaining information
- Create a website that uses AI knowledge to allow users to fact check an article
- Give these articles an authenticity score and report on what is fact or fiction
- Aggregate scores of articles by the same publisher in a database allowing users to view their scores and article authenticity reports

Home Screen

Report Screen

Approach/Features

- 3 Main Pages
  - Home Page: Users can input the URL of an article they wish to fact check and shows example articles cards found in our database from a range of scores.
  - Report Page: Shows authenticity report, including article metadata, score from 0 to 100, and a summary and detailed analysis of why that score was given.
  - Database Page: Contains all article reports created by users for viewing, sorted by publisher with aggregate score. Filtering options allow for easy searching.
- Chrome Extension: Allows for authenticity report creation simply by fetching current page URL and opening a popup for viewing, same style as report page.
- Graphical Visualization: Two visualizations for reports:
  - 1. Categorizes article claims as Accurate, Inaccurate, or Partially Accurate
  - 2. Tracks adjective and descriptor usage toward people or entities, showing Positive, Negative, or Neutral sentiment

Design/Implementation

- System Architecture: EDIT/ADD SYS ARCH IMAGE FROM MILESTONE 1
- AWS AI Nova Lite: Prompt engineer AWS's Nova Lite model to be used as an article fact checking assistant, only judging factual correctness. Produces a JSON file only returning the authenticity score, summary, and detailed analysis.
- DynamoDB: Used to store the reports so they can be accessed again by anyone from either the database page or inputting the article from the home page.
- AWS Amplify: Used to create a serverless backend to host dynamoDB, our database API.

Evaluation Results

- Performance: Achieves report creation and searching/filtering consistently.
- Speed: ~5 seconds to create an article authenticity report and can retrieve reports stored in the database instantly.
- Accuracy: Feed the current date to the model so scores and reports are more consistently and have a mathematical calculation for them.
- User Surveys: Task users to use different features and rank their experience.

Limitations/Improvements

- Continuous Prompt Engineering: The model can give a rough estimate on the accuracy of the article, continuous prompt engineering will yield better results.

Database Screen

NoCap Logo

Milestone 6 Matrix

Task	Thomas	Anthony	Josh	Varun
1. Finalize data graphs/visualizations	50%	0%	0%	50%
2. Cloud deployment	0%	0%	0%	100%
3. Test/demo of the entire system	25%	25%	25%	25%
4. Conduct evaluation and analyze results	25%	25%	25%	25%
5. Create user/developer manual	25%	25%	25%	25%
6. Create demo video	25%	25%	25%	25%