ENAE 380: Final Project Proposal

Due on September 20, 2024 at 11:59 PM

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Questions:

1. What are you passionate about?
2. What is important to you?
3. What do you enjoy?
4. What resources or people outside of this class/school you are considering using?
5. Give a 1-2 Paragraph description of a project you would be interested in doing.
6. In a paragraph or more, outline your next steps. What new skills will you need to acquire? What topics will you need to research?

Answers:

1. I am passionate about Machine Learning.
2. Being able to accurately respond to the issues that come up in my life is important to me.
3. I enjoy watching sports.
4. I am considering using the Rust Handbook to aid me in my project.
5. For my upcoming project, I plan to develop a machine learning application in Rust that will utilize natural language processing (NLP) to analyze news articles from the sports sections of various websites. The application will scrape RSS feeds to collect the latest articles, which will then be processed through an NLP pipeline. This pipeline will handle tasks such as text cleaning, tokenization, and sentiment analysis, allowing the system to extract valuable insights and identify trends in sports journalism. By using Rust, I aim to ensure the application is both high-performing and memory-safe, while the machine learning aspect will enable the system to predict sentiment around players or teams and detect emerging trends in sports news. The goal here is to create a ML algorithm that can predict the winner of the upcoming Super Bowl.
6. To successfully complete this project, I will need to research several key topics. First, I'll need to dive into how to implement machine learning in Rust, which involves understanding available libraries like ‘linfa‘ or ‘tch-rs‘ for training and deploying models. I'll also need to study how natural language processing works, particularly within the Rust ecosystem, possibly exploring crates like ‘rust-tokenizers‘ or ‘vader-sentiment-rust‘ for handling text processing and sentiment analysis. Additionally, I will research how to scrape RSS feeds efficiently using libraries such as ‘reqwest‘ and ‘rss‘ in Rust. Lastly, I plan to learn how to build a simple web-based frontend to visualize the results, which will likely require exploring frontend frameworks compatible with Rust, such as ‘Yew‘, or interfacing with more traditional frontend stacks via APIs to present the analysis results in a user-friendly manner.