Day 20 Training Report

18 July 2025

Final Project Presentation & Course Wrap-up

On **Day 20**, we presented their **NLP final projects** and reflected on the **entire course journey**, integrating both technical skills and critical thinking.

---

1. Project Presentation

- Each student/group **showcased their sentiment analysis project**.
- **Presentation Structure:**
    1. **Introduction:** Dataset description, objective, and problem statement.
    2. **Data Preprocessing:** Steps taken to clean and tokenize text, remove stopwords, and apply stemming/lemmatization.
    3. **Feature Extraction:** TF-IDF vectorization process and top features.
    4. **Modeling:** Classifier used, hyperparameters, and training process.
    5. **Evaluation:** Accuracy, precision, recall, F1-score, and confusion matrix.
    6. **Insights & Recommendations:** Sentiment trends, actionable business insights, and possible improvements.
    7. **Visualization:** Word clouds, sentiment distribution charts, and cluster insights if applicable.

---

2. Peer Review & Feedback

- Students **presented their findings** to the class.
- Received **feedback from peers and instructors** on methodology, results, and presentation clarity.
- Discussed **challenges faced**, such as handling noisy text, class imbalance, or feature selection.
- Explored **ways to improve models**, including advanced NLP techniques like n-grams, stopword optimization, or deep learning models.

---

3. Course Wrap-up

- Reviewed **all topics covered**:
    - **Python basics** and libraries (NumPy, Pandas, Matplotlib)
    - **Supervised learning** (linear regression, logistic regression, k-NN)
    - **Unsupervised learning** (k-Means clustering, cluster evaluation)
    - **Natural Language Processing** (preprocessing, TF-IDF, sentiment analysis)
- Discussed **best practices in machine learning**, including:
    - Importance of preprocessing
    - Feature selection

- Model evaluation metrics
- Visualization and communication of results

---

4. Learning Outcomes

By the end of Day 20:

- Successfully **completed and presented an end-to-end NLP project**.
- Developed skills in **data preprocessing, modeling, evaluation, and presentation**.
- Learned to **analyze and interpret textual data** for real-world applications.
- Consolidated knowledge across **all weeks of the course**, preparing them for **future AI/ML projects or professional work**.
- Gained **confidence in presenting technical findings clearly** and receiving constructive feedback.