Analysis of Emotional Conversations after Alcohol Consumption using Voice Signal Analysis

Student: Supreetha Yenigabal
Faculty Advisor: Professor Ifeoma Nwogu
Course Advisor: Matthew Fluet
Cluster: Intelligent Systems
**Goal:** Analyze how alcohol affects the emotional conversations between people, using voice signals

**Dataset:** Intimate Conversation Dataset (152 Conversations)
PROJECT SUMMARY

- Males: Pre-alcohol consumption vs Post-alcohol consumption
- Females: Pre-alcohol consumption vs Post-alcohol consumption
ACCOMPLISHMENTS

Completed
Speech Emotion Recognition model

Completed
Diarisation of the conversations in the Intimate Conversation Dataset

In-progress
Analyze how different emotions are affected by alcohol consumption for males and females
SPEECH EMOTION RECOGNITION MODEL

Convolutional Block
  ↓ Max-pool
Convolutional Block
  ↓ Max-pool
Convolutional Block
Convolutional Block
  ↓ Max-pool
Convolutional Block
  ↓ Flatten
Fully-connected Layer
  ↓ Dropout
Fully-connected Layer
  ↓ SoftMax (7 classes)

Convolutional Layer
  ↓ Batch Normalization
  ↓ Dropout (0.25)
<table>
<thead>
<tr>
<th>Datasets used for <strong>Training:</strong></th>
<th>RAVDEES + TESS + CREMA-D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dataset used for <strong>Testing:</strong></td>
<td>RAVDEES</td>
</tr>
<tr>
<td><strong>Training Accuracy:</strong></td>
<td>~97%</td>
</tr>
<tr>
<td><strong>Validation Accuracy:</strong></td>
<td>~70%</td>
</tr>
</tbody>
</table>
Diarisation of ‘.wav’ files in the Intimate Conversation dataset to separate voices using CLEAVER software

- Separate out speakers from a multi-speaker conversation
- Extract the speech belonging to each speaker
FINAL STEPS

- **Use the** SER model on Intimate Conversation Dataset (after diarisation) to classify the dominant emotion at each turn of the conversation

- **Analyze** how different emotions are affected by alcohol consumption for males and females
CONCLUSION AND FUTURE WORK
THANK YOU