Chapter 6: Discussion

6.1 Interpretation of Results

Why Interview Speech Performs Better

The 15-percentage-point accuracy advantage of interview over reading speech is the study's most

Cognitive Load: Spontaneous speech requires concurrent planning, lexical retrieval, and

Emotional Engagement: Interview questions about daily life, emotions, and future plans elicit

Pause Behaviour: The prominence of pause features (unvoiced segment duration) reflects

Natural Variability: Spontaneous speech permits greater variation in prosody, timing, and voice

The Importance of Variability Measures

Consistent finding: variability measures (std devs) outperform means for interview speech.

Top 3 interview features are ALL variability measures:

Clinical Implications

Voice Quality Indicators: Hammarberg index and alpha ratio capture spectral

Timing Analysis: Pause duration and variability are highly informative. Automated pause

Task Selection: For speech-based screening, eliciting spontaneous speech (e.g., "describe a

6.2 Comparison with Literature

Alignment with Prior Work

Novel Contributions

1. Direct Task Comparison: Few studies systematically compare same participants across tasks.

2. Feature Interpretability Focus: Most recent work prioritises accuracy via deep learning. We

3. Task-Specific Markers: Divergent feature profiles suggest different mechanisms underlie

Comparison with AVEC Challenges

The 87% accuracy compares favourably with published AVEC results (typically 70-85%).

6.3 Limitations

Dataset Limitations

Limitation Impact

Methodological Limitations

- **Feature Set:** eGeMAPS may not capture all relevant information. Alternative representations could

Generalisability Concerns

Findings specific to ANDROIDS corpus. Requires validation for:

6.4 Future Work

Methodological Extensions

SHAP Analysis: Individual-level feature explanations. Could identify depression subtypes with

Cross-Corpus Validation: Testing on DAIC-WOZ would assess generalisability. Transfer learning

Multimodal Integration: Combining acoustic + linguistic + visual features could improve

Clinical Applications

Longitudinal Monitoring: Track speech markers over time for objective treatment response

Screening Tools: Integration with telehealth or smartphone apps for passive/active screening at

Personalised Baselines: Individual baselines during healthy periods could improve sensitivity

Theoretical Investigations

Mechanism Understanding: Controlled studies manipulating cognitive load/emotional content could

Depression Subtypes: Stratified analysis could reveal subtype-specific markers (melancholic vs

6.5 Summary

This study demonstrates that interpretable acoustic features can effectively detect depression,

Despite limitations (sample size, language specificity), findings provide clinically relevant

Estimated length: 5-6 pages