

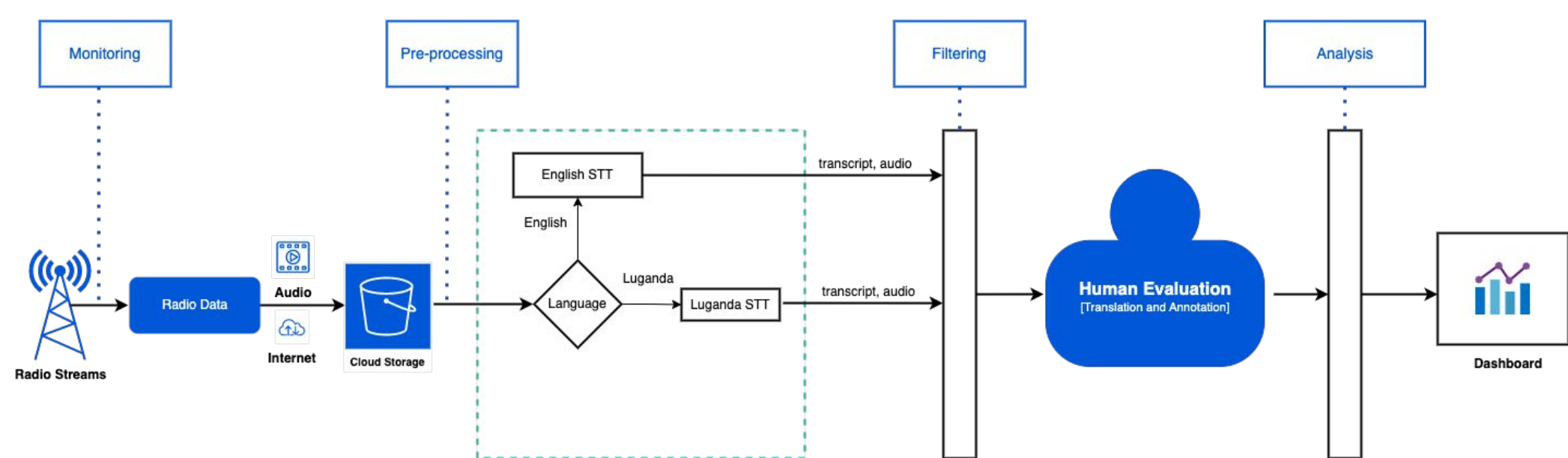
# Machine Learning Analysis of Radio Data to Uncover Community Perceptions on the Ebola Outbreak in Uganda

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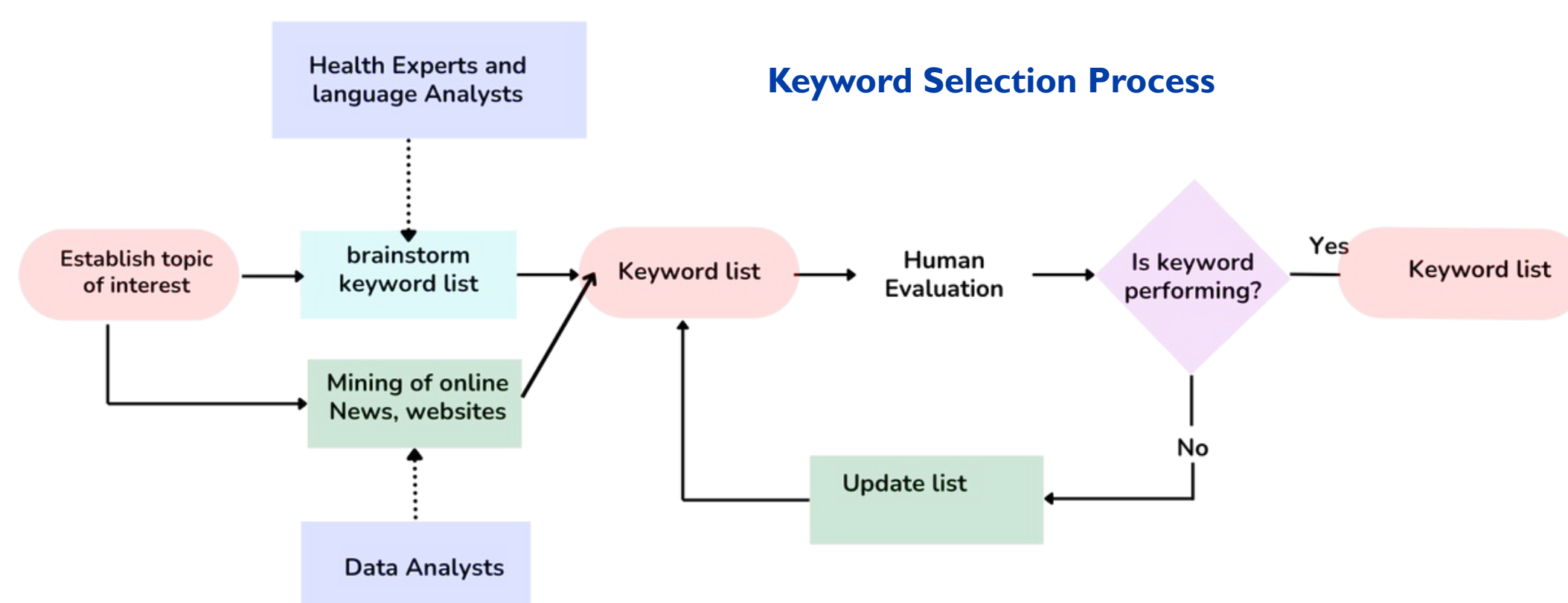
## Introduction

Understanding perceptions within offline communities about different facets of the pandemic is a crucial starting point. The project focuses on mining existing and prospective near real-time radio broadcast data by using automatic speech recognition.

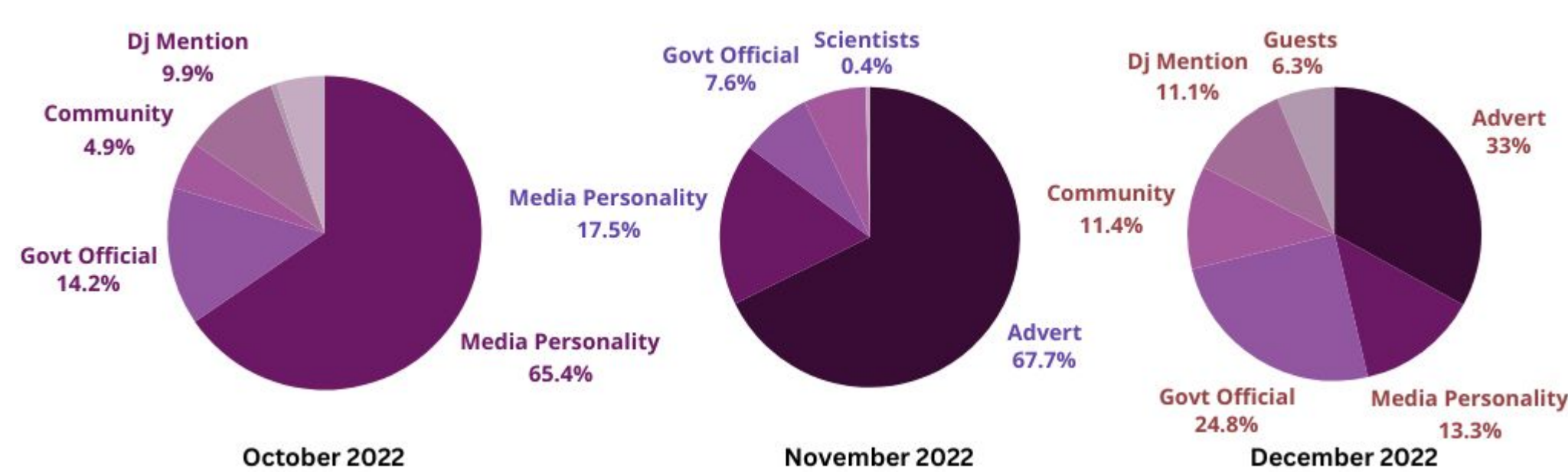
## Radio Mining Pipeline



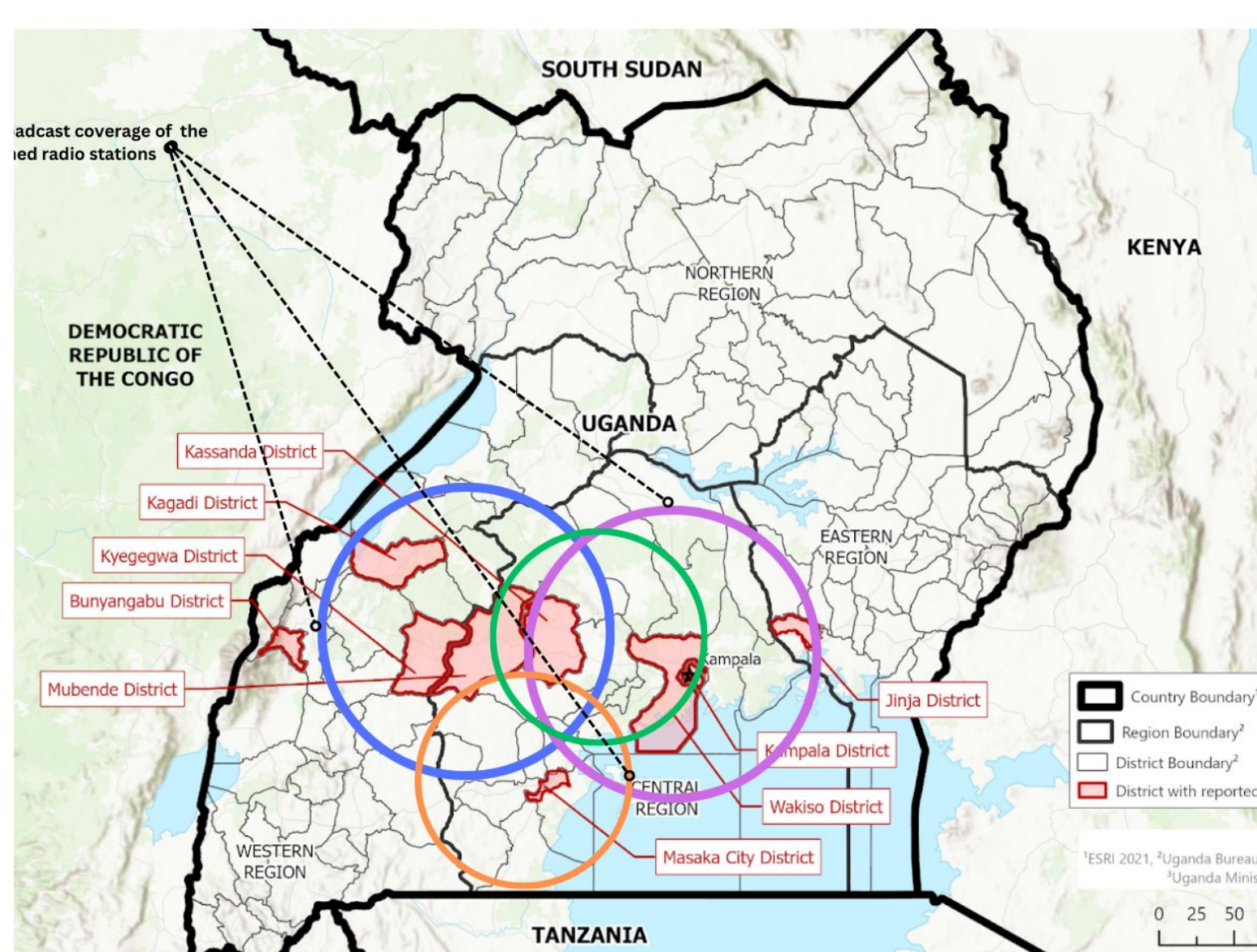
## Objective 3: To generate meaningful insights that could guide policymakers in current and future health outbreaks



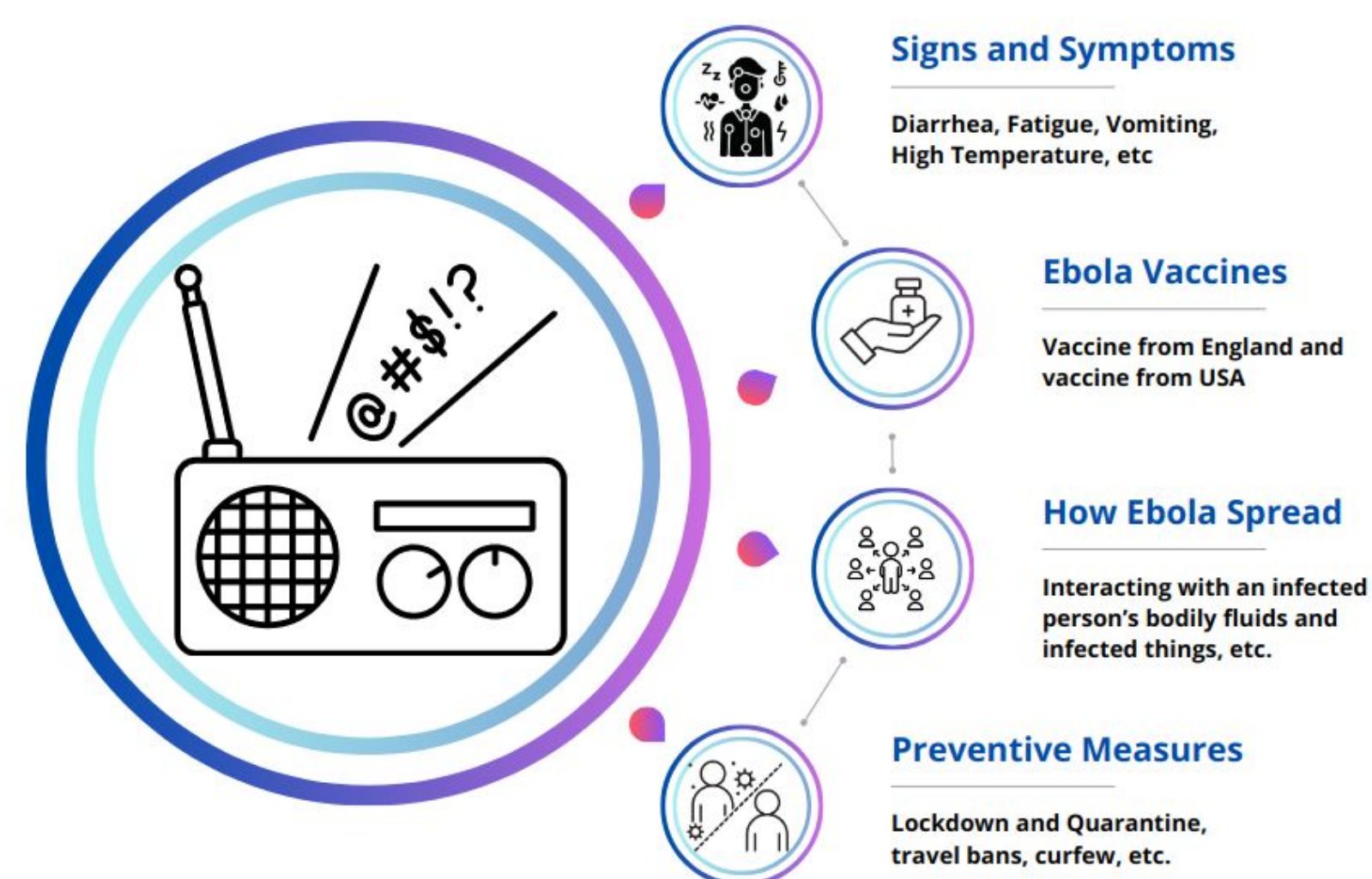
Monthly breakdown of Ebola-related radio conversations by speaker category



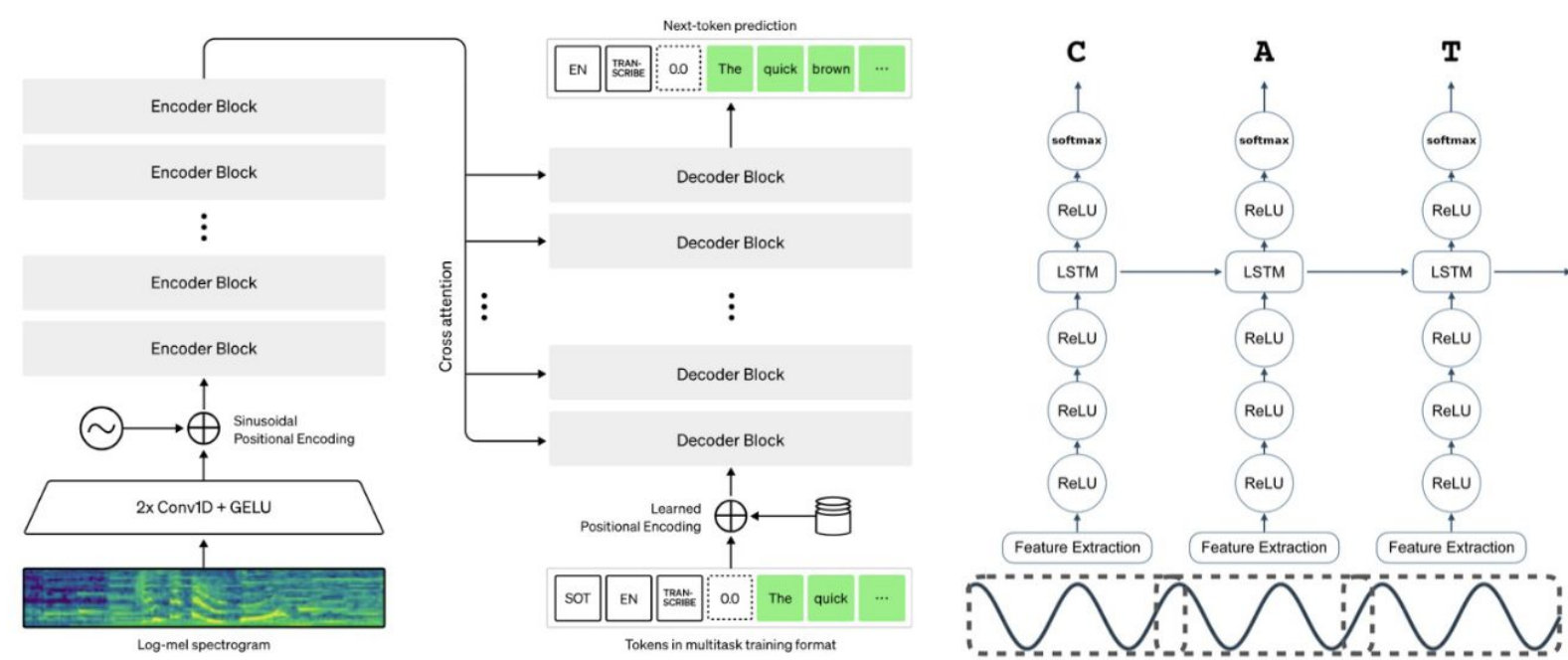
## Objective 1: To collect and transcribe radio data from Ebola affected regions



## Key findings from radio conversations during the Ebola outbreak highlighting community discussions on Ebola symptoms, vaccine awareness, and preventive measures

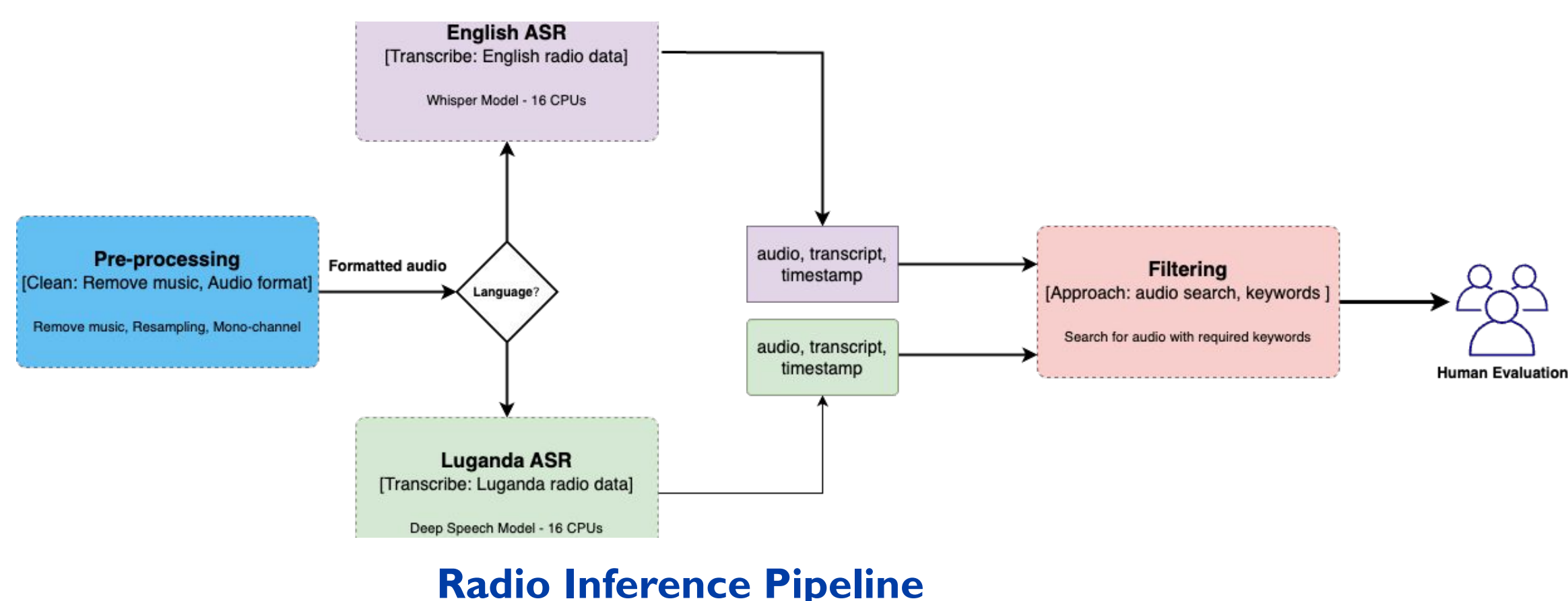
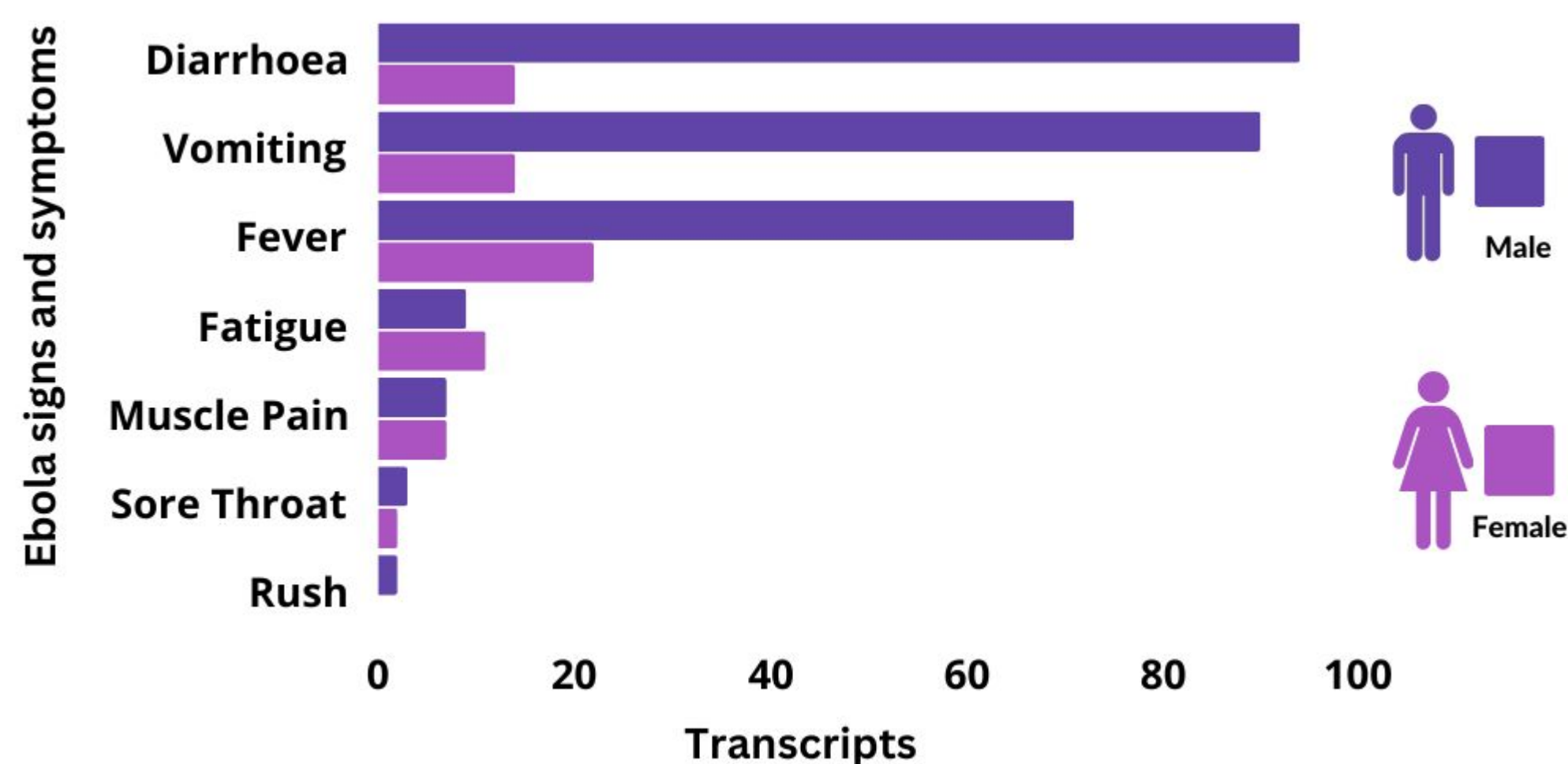


## Objective 2: To build Automatic Speech Recognition for Luganda and Ugandan English



Model	Language	WER
Whisper	Uganda English	4.2
XLSR-Wav2Vec2	Luganda	12
Coqui STT	Luganda	23

## Frequency and gender distribution of discussions on Ebola signs and symptoms, highlighting the most prevalent symptoms



## Research Dissemination/Output

- Nakatumba-Nabende, Joyce, Jonathan Mukiibi, Tobias Saul Bateesa, Sudi Murindanyi, Andrew Katumba, and Chodrine Mutebi. "Machine Learning Analysis of Radio Data to Uncover Community Perceptions on the Ebola Outbreak in Uganda." ACM Journal on Computing and Sustainable Societies (2024).