Features ordered by usefulness: ['tap,', 'glottal,', 'lateral_approximant,', 'pharyngeal,', 'labiodental,', 'postalveolar,', 'alveolar,', 'plosive,', 'post_aspirated,', 'lateral,', 'post_pharyngealised,', 'interdental,', 'velar,', 'voiced,', 'trill,', 'affricate,', 'voiceless,', 'fricative,', 'rounded,', 'bilabial,', 'approximant,', 'uvular,', 'non_lateral,', 'labial-velar,', 'front,', 'nasal,', 'close,', 'velarised,', 'palatal,', 'vowel,', 'consonant,', 'retroflex,', 'post_retracted,', 'post_velarised,']

calculated model

Bigrams of features ordered by usefulness: ['alveolar, plosive', 'fricative, alveolar', 'pharyngeal, voiced', 'post_pharyngealised, alveolar', 'alveolar, voiced', 'plosive, post_aspirated', 'voiceless, plosive', 'plosive, glottal', 'voiced, plosive', 'non_lateral, labiodental', 'post_pharyngealised, postalveolar', 'velar, fricative', 'approximant, post_pharyngealised', 'voiceless, bilabial', 'alveolar, fricative', 'postalveolar, post_pharyngealised', 'plosive, post_pharyngealised', 'consonant, pharyngeal', 'consonant, labiodental', 'plosive, consonant', 'alveolar, non_lateral', 'consonant, postalveolar', 'non_lateral, voiced', 'non_lateral, interdental', 'approximant, consonant', 'consonant, post_pharyngealised', 'post_pharyngealised, affricate', 'plosive, voiced', 'post_pharyngealised, approximant', 'glottal, plosive', 'voiced, pharyngeal', 'bilabial, voiceless', 'alveolar, post_pharyngealised', 'post_aspirated, plosive', 'labiodental, non_lateral', 'voiced, alveolar', 'affricate, postalveolar', 'affricate, post_pharyngealised', 'affricate, alveolar', 'voiced, fricative', 'plosive, alveolar', 'non_lateral, velar', 'consonant, lateral', 'labiodental, consonant', 'plosive, non_lateral', 'non_lateral, alveolar', 'interdental, non_lateral', 'voiceless, glottal', 'fricative, velar', 'bilabial, post_pharyngealised', 'consonant, voiced', 'non_lateral, postalveolar', 'post_pharyngealised, plosive', 'pharyngeal, non_lateral', 'approximant, lateral', 'postalveolar, fricative', 'consonant, post_aspirated', 'consonant, voiceless', 'fricative, voiced', 'fricative, interdental', 'post_pharyngealised, consonant', 'non_lateral, glottal', 'labiodental, fricative', 'non_lateral, pharyngeal', 'lateral, lateral_approximant', 'plosive, voiceless', 'velar, voiceless', 'uvular, non_lateral', 'alveolar, affricate', 'non_lateral, tap', 'postalveolar, affricate', 'post_pharyngealised, bilabial', 'voiced, non_lateral', 'consonant,

alveolar', 'labiodental, voiceless', 'fricative, postalveolar', 'lateral_approximant, consonant', 'glottal, consonant', 'pharyngeal, consonant', 'uvular, fricative', 'alveolar, tap', 'non_lateral, plosive', 'voiceless, velar', 'interdental, fricative', 'lateral_approximant, lateral', 'fricative, labiodental', 'post_aspirated, consonant', 'voiced, postalveolar', 'post_pharyngealised, voiced', 'alveolar, consonant', 'pharyngeal, fricative', 'glottal, non_lateral', 'plosive, velar', 'voiced, consonant', 'voiceless, labiodental', 'consonant, lateral_approximant', 'postalveolar, consonant', 'alveolar, voiceless', 'voiced, interdental', 'consonant, plosive', 'tap, consonant', 'fricative, uvular', 'lateral, voiced', 'fricative, pharyngeal', 'glottal, voiceless', 'post_pharyngealised, voiceless', 'interdental, voiced', 'velar, non_lateral', 'approximant, lateral_approximant', 'tap, voiced', 'voiced, labial-velar', 'voiceless, non_lateral', 'consonant, glottal', 'non_lateral, post_aspirated', 'consonant, approximant', 'postalveolar, voiced', 'bilabial, consonant', 'voiceless, alveolar', 'velar, plosive', 'consonant, interdental', 'voiced, lateral_approximant', 'voiced, labiodental', 'postalveolar, non_lateral', 'bilabial, voiced', 'voiced, tap', 'consonant, uvular', 'voiced, lateral', 'consonant, affricate', 'non_lateral, labial-velar', 'tap, alveolar', 'bilabial, non_lateral', 'labiodental, voiced', 'voiced, bilabial', 'lateral, consonant', 'voiceless, post_pharyngealised', 'interdental, consonant', 'voiced, velar', 'consonant, fricative', 'tap, non_lateral', 'lateral_approximant, voiced', 'voiced, post_pharyngealised', 'postalveolar, voiceless', 'post_aspirated, non_lateral', 'approximant, labial-velar', 'lateral_approximant, approximant', 'consonant, tap', 'consonant, bilabial', 'vowel, rounded', 'fricative, post_pharyngealised', 'non_lateral, voiceless', 'lateral, approximant', 'consonant, palatal', 'consonant, labial-velar', 'consonant, trill', 'voiceless, postalveolar', 'velar, voiced', 'post_pharyngealised, fricative', 'front, vowel', 'non_lateral, uvular', 'labial-velar, approximant', 'non_lateral, bilabial', 'affricate, non_lateral', 'trill, voiced', 'labial-velar, consonant', 'fricative, voiceless', 'fricative, non_lateral', 'rounded, vowel', 'voiceless, consonant', 'velar, consonant', 'labial-velar, voiced', 'non_lateral, affricate', 'uvular, consonant', 'voiced, trill', 'rounded, close', 'non_lateral, post_pharyngealised', 'consonant, non_lateral', 'alveolar, lateral_approximant', 'labial-velar, non_lateral', 'voiceless, fricative', 'voiceless, uvular', 'fricative, consonant', 'voiceless, post_aspirated',

'front, non_lateral', 'lateral_approximant, alveolar', 'trill, consonant', 'consonant, velar', 'non_lateral, palatal', 'post_pharyngealised, lateral_approximant', 'affricate, consonant', 'alveolar, approximant', 'close, non_lateral', 'post_aspirated, postalveolar', 'trill, alveolar', 'uvular, voiceless', 'post_pharyngealised, non_lateral', 'approximant, alveolar', 'post_aspirated, voiceless', 'postalveolar, post_aspirated', 'uvular, voiced', 'close, vowel', 'post_pharyngealised, lateral', 'trill, non_lateral', 'lateral, alveolar', 'voiceless, pharyngeal', 'non_lateral, fricative', 'post_aspirated, affricate', 'non_lateral, front', 'voiceless, affricate', 'lateral, post_pharyngealised', 'palatal, non_lateral', 'affricate, post_aspirated', 'pharyngeal, voiceless', 'alveolar, trill', 'alveolar, lateral', 'non_lateral, close', 'affricate, voiceless', 'velar, post_aspirated', 'nasal, consonant', 'voiced, uvular', 'lateral_approximant, post_pharyngealised', 'non_lateral, trill', 'nasal, voiced', 'post_aspirated, velar', 'vowel, front', 'voiced, nasal', 'palatal, consonant', 'rounded, front', 'approximant, velar', 'non_lateral, nasal', 'front, close', 'post_pharyngealised, nasal', 'non_lateral, retroflex', 'consonant, nasal', 'velar, approximant', 'retroflex, voiced', 'front, rounded', 'voiced, approximant', 'nasal, post_pharyngealised', 'uvular, plosive', 'non_lateral, consonant', 'voiced, retroflex', 'voiced, affricate', 'rounded, non_lateral', 'plosive, bilabial', 'retroflex, consonant', 'nasal, non_lateral', 'approximant, voiced', 'consonant, retroflex', 'close, rounded', 'affricate, voiced', 'retroflex, non_lateral', 'bilabial, plosive', 'close, front', 'plosive, uvular', 'approximant, retroflex', 'vowel, close', 'post_aspirated, voiced', 'approximant, non_lateral', 'velar, post_pharyngealised', 'palatal, voiced', 'retroflex, post_pharyngealised', 'non_lateral, vowel', 'nasal, velar', 'voiced, post_aspirated', 'non_lateral, approximant', 'retroflex, approximant', 'alveolar, post_aspirated', 'velar, nasal', 'non_lateral, rounded', 'post_pharyngealised, velar', 'post_pharyngealised, trill', 'post_pharyngealised, retroflex', 'post_aspirated, alveolar', 'voiced, palatal', 'vowel, non_lateral', 'trill, post_pharyngealised', 'post_pharyngealised, uvular', 'uvular, post_pharyngealised', 'velarised, alveolar', 'bilabial, nasal', 'velarised, approximant', 'nasal, bilabial', 'consonant, velarised', 'velarised, consonant', 'alveolar, velarised', 'velarised, voiced', 'velarised, lateral_approximant', 'glottal, fricative', 'lateral, velarised', 'fricative, glottal', 'voiced, velarised', 'approximant, velarised', 'tap,

post_pharyngealised', 'lateral_approximant, velarised', 'post_pharyngealised, tap', 'velarised, lateral', 'interdental, post_pharyngealised', 'post_pharyngealised, interdental', 'approximant, palatal', 'voiceless, approximant', 'bilabial, post_aspirated', 'approximant, labiodental', 'post_aspirated, bilabial', 'palatal, approximant', 'approximant, voiceless', 'labiodental, approximant', 'pharyngeal, post_pharyngealised', 'post_pharyngealised, pharyngeal', 'velar, post_retracted', 'interdental, voiceless', 'voiceless, interdental', 'consonant, post_retracted', 'post_retracted, non_lateral', 'alveolar, nasal', 'post_retracted, plosive', 'nasal, alveolar', 'plosive, post_retracted', 'voiceless, post_retracted', 'post_retracted, voiceless', 'post_retracted, velar', 'lateral_approximant, velar', 'velar, lateral_approximant', 'plosive, palatal', 'lateral, velar', 'post_retracted, consonant', 'velar, lateral', 'palatal, plosive', 'non_lateral, post_retracted', 'post_velarised, voiced', 'affricate, palatal', 'lateral_approximant, post_velarised', 'consonant, post_velarised', 'palatal, affricate', 'approximant, post_velarised', 'post_velarised, alveolar', 'post_velarised, lateral', 'alveolar, post_velarised', 'voiced, post_velarised', 'lateral, post_velarised', 'post_velarised, lateral_approximant', 'post_velarised, approximant', 'post_velarised, consonant', 'fricative, palatal', 'palatal, fricative', 'voiceless, palatal', 'palatal, voiceless', 'bilabial, fricative', 'palatal, nasal', 'nasal, palatal', 'fricative, bilabial', 'retroflex, fricative', 'fricative, retroflex', 'post_pharyngealised, labiodental', 'labiodental, post_pharyngealised', 'glottal, alveolar', 'labial-velar, post_pharyngealised', 'labial-velar, interdental', 'labial-velar, post_velarised', 'labial-velar, tap', 'interdental, uvular', 'palatal, post_pharyngealised', 'labial-velar, lateral', 'labial-velar, nasal', 'labial-velar, close', 'bilabial, post_retracted', 'bilabial, affricate', 'bilabial, palatal', 'glottal, labiodental', 'labial-velar, lateral_approximant', 'glottal, labial-velar', 'glottal, post_retracted', 'interdental, plosive', 'palatal, lateral_approximant', 'labial-velar, velarised', 'lateral_approximant, post_retracted', 'labial-velar, affricate', 'glottal, glottal', 'tap, post_retracted', 'labial-velar, palatal', 'tap, plosive', 'glottal, vowel', 'glottal, velar', 'voiceless, velarised', 'glottal, retroflex', 'glottal, bilabial', 'tap, velar', 'voiceless, close', 'palatal, interdental', 'tap, trill', 'glottal, postalveolar', 'tap, post_aspirated', 'glottal, uvular', 'glottal, front', 'glottal, close',

'tap, pharyngeal', 'glottal, post_velarised', 'tap, rounded', 'palatal, tap', 'glottal, trill', 'glottal, rounded', 'close, nasal', 'tap, labiodental', 'glottal, pharyngeal', 'glottal, interdental', 'glottal, post_aspirated', 'vowel, glottal', 'palatal, post_velarised', 'glottal, post_pharyngealised', 'alveolar, close', 'interdental, labiodental', 'interdental, alveolar', 'glottal, approximant', 'glottal, velarised', 'voiceless, retroflex', 'voiceless, trill', 'palatal, post_retracted', 'voiceless, front', 'glottal, nasal', 'glottal, lateral', 'post_aspirated, labial-velar', 'glottal, voiced', 'trill, lateral_approximant', 'glottal, tap', 'glottal, palatal', 'bilabial, labial-velar', 'affricate, approximant', 'post_retracted, velarised', 'front, labial-velar', 'trill, tap', 'glottal, lateral_approximant', 'trill, post_retracted', 'bilabial, labiodental', 'trill, front', 'bilabial, retroflex', 'trill, post_aspirated', 'bilabial, trill', 'trill, plosive', 'palatal, pharyngeal', 'bilabial, rounded', 'velarised, retroflex', 'trill, vowel', 'velarised, glottal', 'voiceless, rounded', 'glottal, affricate', 'bilabial, front', 'bilabial, velar', 'bilabial, glottal', 'pharyngeal, palatal', 'bilabial, bilabial', 'bilabial, vowel', 'bilabial, pharyngeal', 'trill, postalveolar', 'trill, labiodental', 'palatal, front', 'bilabial, uvular', 'bilabial, postalveolar', 'bilabial, lateral_approximant', 'tap, vowel', 'bilabial, alveolar', 'palatal, lateral', 'lateral, interdental', 'lateral_approximant, fricative', 'lateral_approximant, front', 'tap, postalveolar', 'velar, pharyngeal', 'velar, front', 'interdental, velar', 'bilabial, close', 'vowel, labial-velar', 'post_aspirated, glottal', 'nasal, interdental', 'trill, approximant', 'palatal, close', 'bilabial, lateral', 'bilabial, interdental', 'palatal, rounded', 'voiceless, vowel', 'bilabial, tap', 'nasal, uvular', 'bilabial, post_velarised', 'nasal, fricative', 'trill, voiceless', 'voiceless, voiceless', 'bilabial, velarised', 'bilabial, approximant', 'lateral, palatal', 'nasal, affricate', 'palatal, post_aspirated', 'voiced, glottal', 'plosive, nasal', 'rounded, post_retracted', 'palatal, trill', 'nasal, lateral', 'plosive, tap', 'nasal, tap', 'plosive, post_velarised', 'nasal, post_velarised', 'plosive, interdental', 'fricative, fricative', 'plosive, lateral_approximant', 'voiceless, labial-velar', 'vowel, bilabial', 'nasal, approximant', 'vowel, vowel', 'lateral, affricate', 'vowel, plosive', 'vowel, alveolar', 'trill, rounded', 'trill, pharyngeal', 'vowel, labiodental', 'vowel, postalveolar', 'voiced, vowel', 'palatal, bilabial', 'vowel, uvular', 'palatal, vowel', 'vowel, velar', 'trill, fricative', 'vowel, retroflex', 'interdental, vowel', 'vowel, trill', 'tap, glottal', 'vowel, post_aspirated', 'post_retracted,

approximant', 'tap, labial-velar', 'plosive, close', 'vowel, pharyngeal', 'vowel, voiceless', 'velar, velarised', 'trill, post_velarised', 'trill, interdental', 'tap, close', 'vowel, fricative', 'vowel, post_retracted', 'velar, affricate', 'tap, bilabial', 'velar, palatal', 'lateral, close', 'lateral, lateral', 'tap, voiceless', 'vowel, nasal', 'interdental, retroflex', 'vowel, lateral', 'fricative, front', 'vowel, voiced', 'tap, fricative', 'vowel, tap', 'tap, front', 'vowel, post_velarised', 'close, post_pharyngealised', 'vowel, interdental', 'post_aspirated, retroflex', 'vowel, lateral_approximant', 'vowel, post_pharyngealised', 'vowel, approximant', 'vowel, consonant', 'voiceless, lateral_approximant', 'plosive, lateral', 'velarised, labiodental', 'velarised, rounded', 'vowel, velarised', 'vowel, affricate', 'pharyngeal, interdental', 'vowel, palatal', 'pharyngeal, tap', 'plosive, labial-velar', 'pharyngeal, post_velarised', 'palatal, retroflex', 'pharyngeal, lateral_approximant', 'palatal, velar', 'pharyngeal, approximant', 'plosive, plosive', 'plosive, vowel', 'labiodental, front', 'front, glottal', 'fricative, post_retracted', 'palatal, uvular', 'fricative, close', 'plosive, labiodental', 'fricative, nasal', 'plosive, postalveolar', 'fricative, lateral', 'palatal, postalveolar', 'fricative, tap', 'palatal, labiodental', 'close, voiced', 'plosive, retroflex', 'close, lateral', 'plosive, trill', 'alveolar, pharyngeal', 'palatal, alveolar', 'pharyngeal, velarised', 'plosive, rounded', 'pharyngeal, affricate', 'plosive, pharyngeal', 'post_retracted, rounded', 'post_retracted, interdental', 'plosive, front', 'post_retracted, lateral_approximant', 'plosive, fricative', 'nasal, velarised', 'post_retracted, post_pharyngealised', 'alveolar, front', 'nasal, lateral_approximant', 'affricate, post_velarised', 'post_retracted, affricate', 'alveolar, velar', 'post_retracted, palatal', 'alveolar, retroflex', 'affricate, tap', 'alveolar, post_retracted', 'close, approximant', 'palatal, velarised', 'affricate, lateral_approximant', 'voiceless, nasal', 'voiceless, lateral', 'voiceless, voiced', 'plosive, affricate', 'voiceless, tap', 'voiceless, post_velarised', 'affricate, velarised', 'alveolar, labial-velar', 'affricate, affricate', 'palatal, glottal', 'alveolar, uvular', 'plosive, velarised', 'plosive, approximant', 'alveolar, bilabial', 'voiced, post_retracted', 'alveolar, vowel', 'front, bilabial', 'nasal, nasal', 'nasal, post_retracted', 'nasal, front', 'nasal, retroflex', 'velarised, vowel', 'alveolar, glottal', 'postalveolar, post_retracted', 'front, plosive', 'non_lateral, lateral_approximant', 'nasal, postalveolar',

'velarised, bilabial', 'palatal, labial-velar', 'nasal, labiodental', 'alveolar, alveolar', 'alveolar, postalveolar', 'alveolar, labiodental', 'alveolar, interdental', 'front, alveolar', 'affricate, front', 'front, labiodental', 'close, interdental', 'close, labial-velar', 'postalveolar, tap', 'close, glottal', 'postalveolar, post_velarised', 'close, bilabial', 'close, palatal', 'close, velarised', 'alveolar, rounded', 'postalveolar, interdental', 'postalveolar, lateral_approximant', 'front, postalveolar', 'close, plosive', 'front, uvular', 'close, alveolar', 'front, velar', 'close, labiodental', 'front, retroflex', 'close, postalveolar', 'close, uvular', 'uvular, trill', 'front, trill', 'close, velar', 'front, post_aspirated', 'close, retroflex', 'close, trill', 'close, post_aspirated', 'front, pharyngeal', 'affricate, interdental', 'front, voiceless', 'velarised, plosive', 'non_lateral, velarised', 'postalveolar, front', 'front, front', 'close, pharyngeal', 'front, fricative', 'close, voiceless', 'front, post_retracted', 'affricate, lateral', 'close, close', 'close, fricative', 'close, post_retracted', 'approximant, vowel', 'approximant, plosive', 'fricative, post_velarised', 'uvular, glottal', 'fricative, lateral_approximant', 'lateral_approximant, non_lateral', 'alveolar, palatal', 'lateral_approximant, close', 'labiodental, labial-velar', 'velarised, labial-velar', 'labiodental, glottal', 'fricative, approximant', 'labiodental, bilabial', 'fricative, velarised', 'labiodental, vowel', 'fricative, affricate', 'labiodental, plosive', 'approximant, affricate', 'labiodental, alveolar', 'post_retracted, labial-velar', 'labiodental, labiodental', 'post_retracted, glottal', 'labiodental, postalveolar', 'post_retracted, bilabial', 'labiodental, uvular', 'post_retracted, vowel', 'labiodental, velar', 'post_retracted, retroflex', 'labiodental, retroflex', 'post_retracted, alveolar', 'labiodental, trill', 'post_retracted, labiodental', 'labiodental, post_aspirated', 'post_retracted, postalveolar', 'labiodental, rounded', 'post_retracted, uvular', 'labiodental, pharyngeal', 'uvular, bilabial', 'uvular, vowel', 'velar, rounded', 'approximant, postalveolar', 'approximant, uvular', 'post_retracted, trill', 'post_retracted, post_aspirated', 'labiodental, post_retracted', 'uvular, postalveolar', 'consonant, vowel', 'post_retracted, pharyngeal', 'labiodental, close', 'post_retracted, post_velarised', 'labiodental, nasal', 'post_retracted, front', 'labiodental, lateral', 'uvular, uvular', 'post_retracted, fricative', 'post_retracted, post_retracted', 'labiodental, tap', 'post_retracted, tap', 'labiodental, post_velarised',

'post_retracted, close', 'labiodental, interdental', 'post_retracted, nasal', 'labiodental, lateral_approximant', 'uvular, velar', 'post_retracted, lateral', 'uvular, retroflex', 'post_retracted, voiced', 'lateral_approximant, nasal', 'tap, nasal', 'labiodental, velarised', 'tap, lateral', 'labiodental, affricate', 'affricate, fricative', 'labiodental, palatal', 'tap, tap', 'postalveolar, labial-velar', 'tap, post_velarised', 'postalveolar, glottal', 'tap, interdental', 'postalveolar, bilabial', 'tap, lateral_approximant', 'affricate, nasal', 'velarised, trill', 'postalveolar, vowel', 'postalveolar, plosive', 'postalveolar, alveolar', 'tap, velarised', 'tap, palatal', 'velarised, post_aspirated', 'postalveolar, labiodental', 'postalveolar, postalveolar', 'postalveolar, uvular', 'post_velarised, front', 'postalveolar, velar', 'post_velarised, fricative', 'postalveolar, retroflex', 'post_velarised, post_retracted', 'postalveolar, trill', 'post_velarised, close', 'post_velarised, nasal', 'post_aspirated, vowel', 'postalveolar, pharyngeal', 'postalveolar, rounded', 'uvular, post_aspirated', 'uvular, pharyngeal', 'front, nasal', 'close, tap', 'close, post_velarised', 'uvular, front', 'front, lateral', 'approximant, approximant', 'front, voiced', 'close, lateral_approximant', 'approximant, interdental', 'post_pharyngealised, palatal', 'non_lateral, lateral', 'postalveolar, close', 'non_lateral, non_lateral', 'postalveolar, nasal', 'post_pharyngealised, post_velarised', 'postalveolar, lateral', 'uvular, nasal', 'uvular, lateral', 'front, tap', 'close, affricate', 'front, post_velarised', 'approximant, tap', 'front, interdental', 'approximant, nasal', 'front, lateral_approximant', 'approximant, close', 'front, post_pharyngealised', 'approximant, fricative', 'approximant, post_retracted', 'non_lateral, post_velarised', 'consonant, rounded', 'postalveolar, approximant', 'consonant, front', 'postalveolar, velarised', 'consonant, close', 'interdental, trill', 'postalveolar, palatal', 'interdental, post_aspirated', 'uvular, labial-velar', 'interdental, rounded', 'interdental, pharyngeal', 'velarised, postalveolar', 'uvular, rounded', 'velarised, uvular', 'velarised, velar', 'post_velarised, voiceless', 'nasal, labial-velar', 'nasal, glottal', 'post_velarised, labial-velar', 'uvular, labiodental', 'uvular, alveolar', 'uvular, tap', 'nasal, vowel', 'uvular, post_velarised', 'nasal, plosive', 'uvular, interdental', 'post_velarised, postalveolar', 'uvular, lateral_approximant', 'post_velarised, retroflex', 'post_velarised, pharyngeal', 'post_velarised, rounded', 'affricate, pharyngeal', 'velar, vowel', 'velar,

labial-velar', 'velar, bilabial', 'velar, glottal', 'post_aspirated, velarised', 'interdental, tap', 'interdental, post_velarised', 'interdental, interdental', 'interdental, lateral_approximant', 'affricate, rounded', 'post_velarised, non_lateral', 'velar, alveolar', 'affricate, close', 'uvular, post_retracted', 'retroflex, labial-velar', 'lateral_approximant, plosive', 'affricate, post_retracted', 'uvular, close', 'retroflex, glottal', 'voiced, front', 'retroflex, bilabial', 'retroflex, vowel', 'post_aspirated, palatal', 'interdental, postalveolar', 'rounded, labial-velar', 'interdental, bilabial', 'rounded, glottal', 'interdental, glottal', 'rounded, bilabial', 'voiced, close', 'voiced, voiced', 'lateral_approximant, labiodental', 'lateral_approximant, uvular', 'approximant, bilabial', 'close, consonant', 'fricative, rounded', 'uvular, approximant', 'fricative, post_aspirated', 'uvular, velarised', 'fricative, trill', 'uvular, palatal', 'uvular, affricate', 'velar, labiodental', 'rounded, fricative', 'velar, velar', 'velar, postalveolar', 'velar, uvular', 'lateral_approximant, retroflex', 'rounded, plosive', 'lateral_approximant, trill', 'rounded, alveolar', 'lateral_approximant, post_aspirated', 'rounded, labiodental', 'lateral_approximant, rounded', 'rounded, postalveolar', 'lateral_approximant, pharyngeal', 'rounded, uvular', 'lateral_approximant, voiceless', 'rounded, retroflex', 'rounded, voiceless', 'rounded, trill', 'rounded, pharyngeal', 'rounded, post_aspirated', 'rounded, rounded', 'velar, trill', 'velar, retroflex', 'retroflex, plosive', 'retroflex, alveolar', 'front, consonant', 'voiced, voiceless', 'front, approximant', 'approximant, front', 'front, velarised', 'voiced, rounded', 'front, affricate', 'approximant, pharyngeal', 'front, palatal', 'approximant, rounded', 'fricative, labial-velar', 'approximant, trill', 'approximant, post_aspirated', 'approximant, glottal', 'trill, bilabial', 'consonant, consonant', 'nasal, trill', 'velar, close', 'nasal, post_aspirated', 'post_velarised, post_pharyngealised', 'fricative, vowel', 'nasal, rounded', 'nasal, pharyngeal', 'nasal, voiceless', 'affricate, trill', 'velar, tap', 'lateral_approximant, tap', 'velarised, pharyngeal', 'velar, post_velarised', 'velar, interdental', 'rounded, nasal', 'nasal, close', 'rounded, lateral', 'post_velarised, interdental', 'rounded, voiced', 'post_velarised, post_velarised', 'rounded, tap', 'post_velarised, tap', 'rounded, post_velarised', 'lateral_approximant, interdental', 'lateral_approximant, lateral_approximant', 'velarised, voiceless', 'rounded, velar', 'velarised, front', 'trill,

uvular', 'velarised, fricative', 'trill, velar', 'velarised, post_retracted', 'trill, trill', 'trill, retroflex', 'rounded, interdental', 'lateral_approximant, affricate', 'rounded, lateral_approximant', 'lateral_approximant, palatal', 'rounded, post_pharyngealised', 'post_pharyngealised, labial-velar', 'post_pharyngealised, glottal', 'affricate, retroflex', 'retroflex, labiodental', 'lateral, labial-velar', 'retroflex, postalveolar', 'lateral, glottal', 'retroflex, uvular', 'lateral, bilabial', 'retroflex, velar', 'lateral, vowel', 'retroflex, retroflex', 'lateral, plosive', 'retroflex, trill', 'lateral, front', 'retroflex, post_aspirated', 'lateral, labiodental', 'retroflex, rounded', 'lateral, postalveolar', 'retroflex, pharyngeal', 'lateral, uvular', 'retroflex, voiceless', 'retroflex, front', 'rounded, consonant', 'lateral, post_aspirated', 'lateral, retroflex', 'retroflex, post_retracted', 'rounded, approximant', 'lateral, trill', 'interdental, labial-velar', 'lateral, rounded', 'retroflex, close', 'lateral, pharyngeal', 'retroflex, nasal', 'retroflex, lateral', 'rounded, velarised', 'lateral, voiceless', 'post_velarised, palatal', 'lateral, fricative', 'retroflex, tap', 'lateral, post_retracted', 'retroflex, post_velarised', 'lateral, non_lateral', 'retroflex, interdental', 'retroflex, lateral_approximant', 'rounded, affricate', 'post_velarised, affricate', 'rounded, palatal', 'lateral, nasal', 'post_velarised, velarised', 'lateral, tap', 'post_pharyngealised, vowel', 'velarised, non_lateral', 'retroflex, velarised', 'velarised, close', 'retroflex, affricate', 'velarised, nasal', 'retroflex, palatal', 'trill, glottal', 'trill, labial-velar', 'post_pharyngealised, velarised', 'post_pharyngealised, post_pharyngealised', 'trill, close', 'interdental, close', 'trill, nasal', 'interdental, nasal', 'trill, lateral', 'trill, velarised', 'interdental, lateral', 'trill, affricate', 'trill, palatal', 'pharyngeal, labial-velar', 'affricate, uvular', 'pharyngeal, glottal', 'tap, approximant', 'pharyngeal, bilabial', 'lateral_approximant, bilabial', 'pharyngeal, vowel', 'tap, affricate', 'lateral_approximant, glottal', 'velarised, tap', 'post_aspirated, trill', 'post_aspirated, post_aspirated', 'pharyngeal, plosive', 'post_velarised, uvular', 'pharyngeal, alveolar', 'post_velarised, velar', 'pharyngeal, labiodental', 'lateral_approximant, vowel', 'pharyngeal, postalveolar', 'post_velarised, trill', 'post_velarised, post_aspirated', 'velarised, post_velarised', 'post_aspirated, rounded', 'post_aspirated, pharyngeal', 'pharyngeal, uvular', 'post_velarised, glottal', 'post_velarised, bilabial', 'post_aspirated, front', 'pharyngeal, velar', 'post_velarised,

vowel', 'pharyngeal, retroflex', 'post_velarised, plosive', 'pharyngeal, trill', 'lateral_approximant, postalveolar', 'post_velarised, labiodental', 'post_aspirated, approximant', 'pharyngeal, post_aspirated', 'post_pharyngealised, post_aspirated', 'pharyngeal, rounded', 'pharyngeal, pharyngeal', 'fricative, plosive', 'post_pharyngealised, rounded', 'affricate, velar', 'tap, uvular', 'interdental, post_retracted', 'post_aspirated, labiodental', 'pharyngeal, front', 'tap, retroflex', 'interdental, front', 'post_aspirated, uvular', 'post_pharyngealised, front', 'velarised, interdental', 'affricate, vowel', 'post_aspirated, fricative', 'post_aspirated, post_retracted', 'post_pharyngealised, post_retracted', 'pharyngeal, post_retracted', 'affricate, labiodental', 'interdental, approximant', 'post_aspirated, close', 'interdental, velarised', 'post_aspirated, nasal', 'interdental, affricate', 'post_aspirated, lateral', 'interdental, palatal', 'lateral_approximant, labial-velar', 'post_aspirated, post_velarised', 'post_aspirated, tap', 'post_pharyngealised, close', 'velarised, post_pharyngealised', 'affricate, plosive', 'post_aspirated, interdental', 'post_aspirated, post_pharyngealised', 'post_aspirated, lateral_approximant', 'affricate, bilabial', 'velarised, velarised', 'pharyngeal, close', 'velarised, affricate', 'pharyngeal, nasal', 'velarised, palatal', 'pharyngeal, lateral', 'affricate, labial-velar', 'affricate, glottal', 'palatal, palatal', 'labial-velar, post_retracted', 'labial-velar, fricative', 'labial-velar, front', 'labial-velar, voiceless', 'labial-velar, pharyngeal', 'labial-velar, rounded', 'labial-velar, post_aspirated', 'labial-velar, trill', 'labial-velar, retroflex', 'labial-velar, velar', 'labial-velar, uvular', 'labial-velar, postalveolar', 'labial-velar, labiodental', 'labial-velar, alveolar', 'labial-velar, plosive', 'labial-velar, vowel', 'labial-velar, bilabial', 'labial-velar, glottal', 'labial-velar, labial-velar']

calculated model

Phonemes as features ordered by usefulness: ['ŋ', 'm', 'kʰ', 'ts’', 'ʔ', 'ʕ', 'tsʰ', 'ɖ', 'k', 'q', 'f', 'ɲ', 't̪', 'ts', 'pʰ', 'j', 'n', 'g', 'tʰ', 'tɕ', 'sˤ', 'dʒ', 'dz', 'p', 'ʈ', 'ɾ', 'ʃ', 'tʃʰ', 'sʲ', 'd̪', 'tʃ’', 'c', 'χ', 'ɽ', 'r', 'h', 'r̪', 'w', 'v', 'x', 's', 't', 'ħ', 'ʁ', 'ɞ', 'ʎ', 'd', 'l̪', 'ɬ', 'lˤ', 'ʒ', 'nʲ', 'ð', 'l̪', 's̪', 'bʲ', 'ɟ', 'dˤ', 'ɳ', 'χʷ', 'z', 'ɦ', 'k’', 'ɣ', 'b', 'θ', 'tʃ', 'tˤ', 'lʲ', 'ʎ̪', 't̪ʰ', 'ɡ', 'n̪', 'ɢ', 'ʂ', 't̪ʰ', 'rˤ', 'kʲ', 's̪', 'ʊ', 'r̪', 'l', 'cç', 'ɬ̪', 'p’', 'ɫ', 'sʰ', 't̪s̪ʰ', 'ç', 'pˤ', 'qʰ', 'ǵ', 'rʲ', 't’', 'd̪z̪', 'ɬ̪', 'ʈʂ', 'ʐ', 'qː', 't̪’', 'ɲ̪', 'tʃˤ', 'gʱ', 'ɰ',

'ʜ', 'ts̠', 'ⁿd', 'dʑ', 'gʲ', 'ʈʰ', 'zʲ', 'n̠', 's̠', 'n̠', 'zˤ', 'ɖʐ', 'dʒʰ', 'vʲ', 'ðˤ', 'y', 'kʷ', 'ɗ', 'b̪', 'ɬʲ', 'β',
's̞ː', 't̠s̠', 'r̠', 'ɬɮ', 'tɕʰ', 'l̩', 'q', 'hʲ', 'r̪', 't̠', 'ɜː', 'cʰ', 'ʀ', 'ʁʷ', 'β̞', 'c̠', 'mʲ', '(lj)', 'fʲ', 'ðˤ',
'z̠ˤ', 'bɦ', 'qχ', 'dz̠', 'gˤ', 'ɓ', 'ɹ', 'ʟ', 'ɴ', 'tʲ', 'ʔ', 'j̃', 'qˤ', 'kʷʰ', 'ʐ', 'l̪', '(gj)', 'ˀd', 's̠ˤ', 'd̠z', 'ɮ',
'kˤ', 'ð̪', 'z̠', 'tʃʲ', 'ⁿg', 'z̠', 'l̃', 'sˤ', 'pʲ', 'cçː', 'ɲ̊', 'm̪', 'ɬ', 'd̠ɦ', 'd̠', 'pʲʰ', '(dj)', 'dʰ', 'ˀb', 'kx',
'ɹ', 't̠', 'l̪', 'ʎ̟', 'mˠ', 'ʐ̂', 'd̠ˤ', 'gʷ', 'zˤ', 'ʃʲ', 'r̠', 'ʕ', 'tʂ', 'x̠', 'd̠ʰ', 't̠s̠', 'd̠', 'ⁿdz', '(sj)', 't̠ʰ',
'ˀɣ', 'dɦ', 'ʃː', 'tç', 't̠s', 'tʰʲ', 'tʲʰ', 'ŋ̠', 'r̠', 'ɖɦ', 'fˠ', 'd̠̞', 'tˤ', 't̠ʲ', 'ɢ̠', 's̠̞', 'ˀg', 'n̠', 'qχ', 'ŝ',
'fˀ', '(bj)', 'ts̠', 'ɣʲ', 'gʰ', 'r̠', 'g̃', 'ʍ', 'ɬ̠', 't̠', 'dʑ̂ʷ', 'z̠', 'ⁿb', 'sˠ', 'xʲ', 'ɽɦ', 'mˤ', 'ˀj', '(nj)', 'kʰʲ',
'qʷ', 'r̠', 'pf', 'dʎ', 'ŋ̊', 'ʮ', 'tː', 'n̠̊', 'xː', 'ˀm', 'ɬ̠', 'bˤ', 'n̠ˠ', 'tʂʰ', 'dʲ', 'gʲ', 'ɖʰ', 'dzʰ', 'ɻ', 'ⁿɖʐ',
'r̠ˤ', 'xʷ', 'pː', 'k̃', 'ˀŋ', 'kˀ', 'd̠ˠ', 'l̠', 'ⁿdʑ', 'm̠', 'w̠', 'ɻˤ', 'kʷˀ', 'ʁ̠', 'ɦ̃', 'ç̟', 'ˀn', 'l̠ˠ', 'b̃',
't̠s̠', 'd̠', 'rɦ', 'r̃', 'dː', 'ˀd', 'qʷˀ', 'ˀw', 'dz̠', 'θ̠', 'ʒʲ', 'bˠ', 'rʲ', 'ɮ', 'ɢʁ', 'ⁿdʒ', 'ħˤ', 'pʰˀ', 'ˀɲ',
'd̠̞ʒ̠', 'ʰt', 'qˀ', 'ɬː', 'lɦ', 'z̠', 'ʃ̠', 'kʲˀ', 'kˀʷ', 'v̠', 'ʯ', 'mʰ', 'ʔː', 'gʷ', 'ɲ̠', 't̠s̠̞', 'ɤ̃ˠ', 't̠̞', 'gː',
'l̠̊', 'χʲ', 'd̠z̠', 'nˤ', 'ŝ', 'pʰʲ', 'tʃʷ', 'ʃ̠', 'ŋ̠', 'ɬɦ', 'ĝʷ', 'ɣ̊', 'ʰp', 't̠̠', 'n̠̠', 'bʰ', 'kˀʷ', 'r̠ʲ', 't̠ˤ',
'kʰˀ', 'r̠ˠ', 'tsʲ', 'mɦ', 'ˀt', 'vˤ', 'tʷʰ', 'd̠̞z̠̞', 'ʒ̂', 'ʲ', 'sˀ', 'bː', 'qˀʷ', 'tʂʷ', 't̠ː', 'ð̠̠', 'p̃', 'n̠̊', 'z̠',
'kʰʷ', 'θ̠', 'tʃː', 'tɬ', 't̠s̠ʰ', 'ɹ̠', 'ð̊', 'ⁿtʰ', 'r̠', 'n̠ɦ', 'nɬ', 'ɬ̠', 'ʰk', 'kʲʰ', 'ʔʷ', 'tʲ', 'rː', 'ð̠̟', 'pˀ',
'cˀ', 'd̠ʲ', 'd̠̞ʐ', 'ʐ̂ˀ', 'lʰ', 'd̠ɦ', 'ʰts', 'ⁿpʰ', 'tʃˀ', 'ʂ̠', 'ʂʲ', 'd̠̞ʐ̠', 'ŋɦ', 'tɬ', 'n̠̠', 'kː', 'n̠ʲ', 'd̠̠̞',
'ʃ̠', 'tˀ', 'ʐʷ', 'ts̠', 'ⁿkʰ', 'ɦ̃', 'd̠̞ʐ̠', 'dzɦ', 'ɬʰ', 'ɲː', 'ʐ̂ʷ', 't̠̞ʂ̠', 'ʃʷ', 't̠̠', 'nː', 'ts', 'ʂʷ', 'ɬˀ', 'ʰtʰ',
'ⁿd̠z̠̠', 'ħʷ', 't̠ʲ', 'w̠ʲ', 'tɕˀ', 'ŋː', 'ʒ̠', 'tsːʰ', 'ɖʲ', 'ⁿd̠', 'z̠ʲ', 'ðʲ', 'χː', 'ʰtɕʰ', 'ʮˤ', 'sˀ', 'lː', 'd̠̞ʲ',
't̠ˠ', 's̠̠', 'qʲˀ', 'rʰ', 'tsʷ', 'ʰtʃʰ', 'tsː', 'tɬːʰ', 'ŝʷ', 'w̠', 'xk', 'θˀ', 'd̠', 'ⁿɖ', 'dʷ', 'd̠ʲ', 'ʰtsʰ', 'd̠̠̞',
'ʎʲ', 'ɬ̠ɮ̠', 't̠s̠ʲ', 'tʃːʰ', 'mː', 'tŝʷˀ', 'ŋʲ', 'd̠̞ʒ̠', 'ʐ̂ʲ', 'ɜˀ', '(z)', 'ʐʲ', 'pːʰ', 'n̠ʲ', 't̠ʰʲ', 'tʷˀ', 't̠', 'ʰqʰ',
'ʰtʃ', 'ɦ̃ʲ', 't̠ʂ', 'ŋʲ', 'pˠ', 'ŋ̟', 'fː', 'ʰt̠ʂʰ', 'qˀʷ', 'rʰ', 'tŝʷʰ', 'l̠ʲ', 'l̠ʲ', 'ŋʷ', 't̠ʰ', 'ⁿtɕʰ', 'w̠ʲ', 'ʰpʰ',
't̠s̠ˀː', '(ɞ)', 'ʁʲ', 'r̠ˠ', 'k̠', 'ɸ', 'ʷr', 'ʰsʰ', 'pˠʰ', 'nʰ', '(ʒ)', 'tʂˀ', 'ʰtʃː', 'd̠ʰ', 'vˠ', 'ʰkʰ', 'ɬˠ', 'sʷ', 'tɬˀ',
't̠ˠʰ', 'ʂ̠', 'ʰkː', '(z)', 'r̠ʲ', 'qːʷ', 'tʷ', 'r̠ʲ', 'ʰpː', 'dzʲ', 'd̠ʐ', '(dz̠)', 'xːʷ', '(ʃ)', 'jː', 'd̠□ʲ', 'qˤ',
't̠ʂ̠ʰ', 'β̠', 'dʒʲ', 'kːʷ', 'ʰts̠', 'ⁿɢ', 'ʁˤ', 'ç̠ː', 'χːʷ', 'qʰʷ', 't̠ˀ', 'tʷ', 'ⁿt̠s̠ʰ', 'ʰtː', 'ts̠', 'dʒː', 'tʃʷʰ',
't̠ɬ̠ˀ', 't̠ʂ', 'ð̠ː', 't̠s̠̠', 'mʷ', 't̠ɬ̠', 'ʐ̂', 'kxː', 'dʐʰ', 'ⁿt̠ʂ̠ʰ', 'tŝʷ', 'qχːʰ', 'ʒʷ', 'ʃˀ', 't̠r', 'ʂʰ', 'ʔˀ', 'tɬːˀ',
'qʷʰ', 'ⁿd̠ʐ', 'd̠̞ʒ̠', 'ʃːʲ', 'pˀʷ', 'ŋʰ', 'xʰ', 'ⁿt̠rʰ', 'ŝˀʷ', 'd̠̞z̠ʲ', 't̠ʃ̠', 't̠rʰ', 'ʔˀʷ', 'vː', 'b̪ɦ', 'ʒːʲ', 'ɬː',
'ˀʐ', 'ɖɻ', 'r̠ʲ', 'ⁿɖɻ', 't̠ʃ̠', 'tʃːʲ', 'd̠̞ɦ', 'ɖː', 'l̠ʲ', 'dzː', 'd̠z̠', 't̠̠', 'd̠̞ʒ̠ɦ', 'ʊʲ', 'kːː', 'ⁿg', 'ŋ̠',
'd̠z̠ː', 't̠ʃ̠ʷ', 'tsˀ', 'g̠ɦ', 't̠s̠ʰʷʲ', 'ⁿtsʰ', 'pʷ', 't̠̠s̠̠', 's̠ˀ', 'tʃˀʷ', 'qːʷ', 'ɹ̠', 't̠s̠ʰʲ', 't̠s̠',
'lˠ', 'ɢʷ', 'd̠̞ʒ̠', 't̠ʰʷʲ', 'm̠', 'pʰʷ', 'qːː', 'tʃ̠ʰ', 'qˀʷʲ', 'nˠ', 'd̠̞ʒ̠ʷ', 'ɕʰ', 'tʃːː', 'qʰʷʲ', 'z̠̠', 'tʃ̠',
'tɬˀːː', 't̠ˀʷʲ', 'ⁿtʃʰ', 'kˀːʷ', 's̠̠', 'qʲ', 'l̠̞ː', 'ŋɦ', 'tɬː', 'd̠̠', 'qʷʲ', 'gːʷ', 'nɦ', 's̠ʷʲ', 'ʔ̃', 'qʰʲ', 'ɠ', 'χʷʲ',

'p’ʲ', 'ɟ', 'kʷʲ', 't̪ʼʷ', 'k’ʲ', 'ɬ̪', 'dʐ', 'z̪ʷ', 'k’ʷʲ', 't̪ʰʷ', 'n̪̩', 't̪s̪ʷʲ', 't̪s̪’ʲ', 't̪ʷ', 'χˤʷ', 't̪s̪’ʷ',
'sʲʰ', 'jʰ', 't̪ʷʲ', 'χːˮ', 'tŝʰ', 'ʁː', 's̪ʷ', 'n̪ʰ', 'qχʰ', 'dẑ', 'sːˮ', 'm̪ʲ', 't̪’ʲ', 'ʕʷ', 's̪', 'ʔˤ', 't̪s̪ʷ', 'z̪ʰ',
'χˤ', 'ʃːˮ', 'q’ʲ', 'ɬʷ', 'cːʰ', 'ɾ̪', 's̪ʲ', 'z̪ʰ', 'tŝ', 'tʃːˮ', 'kːʷʰ', 'ʜʷ', 't̪s̪ʰʷ', 'z̪', 'kːʰ', 'tɬʰ', 'qχːˮ',
't̪s̪’ʷʲ', 'kʰʷʲ', 'hʷ', 'tsːˮ', 'tʃʰʷ', 'ɽ̪ʰ', 'kxːʰ', 'tɬ’ʷ', 'tʃːʷ', 'tɬʰʷ', 'd̪̩ʰ', 's̪ː', 'tsʰʷ', 't̪s̪ː', 'tʰʷ',
'ɣʷ', 'tʃ’ˤ', 'ʃʰ', 'd̪̩ʰ', 'ʃːʷ', 'ʒˤ', 't̪’ˤ', 'tsʰˤ', 'ʈ', 't̪ʰˤ', 'ɬɮ̪', 'pʰˤ', 'ḷ̪', 'ɾ̪', 'tʃʰˤ', 'r̪̩', 'zʷ', 'l̪ʰ',
't̪ɕ̪', 'tsʼʷ', 'd̪ẓ̪', 'dʒʰ', 'd̪ẓ̪ʰ', '□', 't̪ɕ̪ʰ', 'v̪', 'ʒ̪', 'ⁿʈʂʰ', 'ǥː', 'ʰpʲ', 'ŋʲː', 'tɕː', 'ⁿcʰ', 'sʲː',
'zː', 'βʲː', 'βʲ', 'bʲː', 'wʰ', 'ḷʲː', 'mʲː', 'nʲː', 'ʰtʲ', 'b̪ː', 'ⁿʈʰ', 'ʰtɕ', 'tsʲː', 'm̪ʲː', 'pʲː', 'zʲː', 'lʲː',
'ʰtsʲ', 'kʲː', 'ˮʃ', 'r̪ː', 'n̪ː', 'ˮs', 'ḷ̪ː', 'ˮl', 'fʲː', 'gʲː', 'rʲː', 'β̪ː', 'd̪ː', 'n̪ʲ', 'ʂː', 'xʲː', 'n̪ʲː', 'r̪ʲː',
'ʰkʲ', 'd̪z̪ʲ', 'm̪ː', 'cçʰ', 'çʰ', 'ʷɟ', 'ʷẓ', 'ɦg', 'ɦl', 'ⁿxʰ', 'ʰʷʂʰ', 'ʷm', 'ɦɟ', 'ʷz', 'ʰʷs', 'ɦɖ', 'ʰʷtɕ', 'ɦdz',
'ʰʷʈ', 'ʰʷɕʰ', 'ⁿʂʰ', 'ɦɲ', 'ɦdẓ', 'ɦn', 'ɦm', 'ʰc', 'ʰl̪', 'ʷd', 'ʰʷʂʰ', 'ɦẓ', 'ɦŋ', 'ʷl', 'ɦd', 'ɦb', 'ʰʷk', 'ʷẓ', 'ʰʷts',
'ɦz', 'ʰʈ', 'ʰʷʈ', 'ɦj', 'ʋ̪', 'n̪̩', 't̪ɕ̪ˮ', 'ⁿqʰ', 'ɬ̪̩', 'dʒˤ', 'ʐ̪', 'ⁿq', 'ⁿʈʂ', 'ⁿts', 'ⁿp', 'ⁿt', 'ⁿk', 'ⁿtʃ', 's̪̩',
't̪ɕ̪̩', 'ʔˤ', 'f̪', 'q̪', 'ⁿc']