### **Features to consider:**

* Interruption - (Interrupt Intent)
* Acknowledgement - (Agree, Accept, Negate, Answer, Acknowledge, Apologize, Thank, Empathy, Sympathy Intent)
* Hold Time
* Tone (Model Output, Tone Graph, Difficulty Index and WPM)
* Coreference (NER, Noun Chunks and Coref Tags) and Guess Intent
* Clarity (Clear, Understand, Argue, Repeat Intent)
* Offer Help (Favour, Offer, Help, Courtesy)

### **Model Structure:**

* Layers:
  + Base Layer (Caller Dialogues)
    - Filter Intents: Inquiry, Question, Request, Complaint
    - Caller History (Context Analysis)
    - Purpose of Call, Notations
  + Second Layer (CSR Dialogues)
    - Time in-between
    - Follow Up Intents: Response, Offer Help, Question, Acknowledgement, Clarity, Coreference, Interruption, Guess, Tone.
    - CSR Profiling
  + Third Layer (Couple Dialogues)
    - Identify Positive Cases and Negative Cases
    - Multi-dialogue level Coreference Resolution
    - Intermediary Results
  + Feedback Layer
    - Continual Learning
    - Feed Intermediary Outputs to Model
  + Final Layer (All Conversation)
    - Combine Results of all previous layers
    - Accumulative Result for Conversation (references to negative areas)
  + Feedback Layer
    - Continual Learning
    - Feed Final Outputs to Model
* Type:
  + CNN
  + If unsucessful, test RNN
  + If unsucessful, test LSTM
  + If unsucessful, test GRU
* Data:
  + Word Embeddings
* Config:
  + Id
  + Name
  + Req\_Data = Features List, Hyper Parameters and Cross validation Dict
  + Req\_Args = Vectorization Type, Data Type, Split Level
  + Req\_Input = Dependant Models
* Visualization: [Diagram Link](https://www.draw.io/?lightbox=1&highlight=0000ff&edit=_blank&layers=1&nav=1&title=ActiveListening.drawio" \l "R7V1Zb9s4EP41BtKHFDpt%2BTFxjhabZIMkbYF9YyTaJiqLWh2x01%2B%2FJE3Klki1StayjqhAY2t4iJ75Pg45pKiROVttriMQLm%2BxB%2F2RoXmbkXkxMgx9PDbIB5W8biXGdGptJYsIeTzXTvCIfkEu1Lg0RR6McxkTjP0EhXmhi4MAuklOBqIIr%2FPZ5tjP3zUECygJHl3gy9IfyEuWW6ljazv5F4gWS3FnXeMpKyAyc0G8BB5e74nMy5E5izBOtt9Wmxn0qfaEXrblrkpSs4ZFMEiqFBhf2P%2Fi2b%2Fz%2Bfpsc3F%2BdR7Cl82pze3zAvyU%2F2Le2uRVqCDCaeBBWos%2BMs%2FXS5TAxxC4NHVNrE5ky2Tl82S5VbyhLzBK4GZPxFt5DfEKJtErycJTTWF7jpnTTLDeWcAQel7uad8wuRBwqy%2ByyneKIV%2B4bt6iJ70DerINWU%2F6dCzrSR%2FbdelJ64CepuOKeDIn45r0ZE1bqCfNyetJ16sSL%2Bv1Dq4oswuAUvBOjSfLqUlNRivxZOfUNJkq1KSr0GTVhSbDaZ%2BaLDuPJtNRqMlQoWlcm5pa6O30FqpJ0tLXIEwTIroBrzCSVBav0coHAbk6d5fI90gunNJWxglwf4qr8yWO0C8cJEBojyRHCR8ak%2F5wP8cjLUnEVDpHvj%2FDPo7Y3UxNc9z5nMpJzj35FftH5HkL0lz8HrolrnnbNdaICP%2FMxsAGLQ9jkv9eGFXLRDcgTkTTxaCXpnogXrL70Qvgo0VAvrukNNHVYXocM48RR%2BG%2F9PFx%2FZeCSeSnajMckN8VgwThgF1GYRqPDDLeoN6FaoPmuoIgSYlSpQRSnOgkKS85e3wgf%2B8jTFABJSQK5ftwnmS2FRgJMIPoPpy4KCYER8HihpW6sAqooZigtkJk9nTGb5DgUMACPGdYinACkr1rYnQBGBkFv6Xen6EhuouKSJjUBQRLAsIM%2BD7tJbSh12i019CdfK8xtipixakLK3ZZpyEQc4GAjxepomP4SvQSJHH%2FGG9VNusbGW%2FXZcWxzHjWKQ90b5TuVuvoPimjO4PLB%2BT6uLJN28J1eV55uXqGnkf0OTC9LY7dVsT9lDCpbcaoitJQJn8jmo%2BIXQNvz8v3jdVOZfu9kdW1Rf3F9HGgdZtoXXTgzdNaV8XLZF5Td943UmcU6RCr5bgdjcZgP%2BXBmIHXrXDXliLCe2Rel0Xv8rwWsbjecbu2KFt93JZDJwO3W8Dtos9uAbfl8IyC270NoGdE6RC35TjJBQxiOLC6NR5ba5zVqgV%2Byur7NAoxxQqpV7uj9CH%2BoIehs4wkHeK1HBUZeN0ub904r8XGjo%2FL62llI7aF14Y8zz5L6IrFMBJv0R4Zo%2BryV33cLptl34Iw3EZa99bA%2BkbsjCUdIrZiLwsOXEC4Tf4PlG6a0nrjAXGjbAfLLYwWsOeErm2nSn2ElmMhT2i1tdMLipm%2FHkjd8F7Wxjldtk3lAhF9oueUdv0ax83JF%2Bx7n3pI7tq2ptRGblNenBym1%2B2gdmNcNuWpGZ9ORzgECzaK0%2F66%2F9o%2FApvVrdUaAsuDqWsfPwOfTZE21GoY%2B2yiNDC5WSd9ajVP7bJ1rRlePaOAqMPQzsgvpM%2B994%2Fd3VvVModVrbaT2hYPsjZH6rJlrSsUMD%2Fwg7Wih7Nps3vrWaZiPYsMq%2FDw0EeTnNbznDbEOTSNcVrE3RWOOoqg%2B9tVku7TunvLWZY8jx6e5GoXqXXbbJrUZRNrTurRLvTd1xm21b0ZtiWvQA4eu23kdhrfhGLJ654fx2NnHOkQreXA2eCx20XqceNL1VZ5vEx4bPpAZm%2B9dfciZpYcMfs7TQZeN8lrcf5cNhLXFIe9HZnYZTGzM%2BKpX1h8FcUJDFQLJ92ndffCZrZqG2DBLm4avWTEgYF3Rk%2F4pVj2QRwjd1Tt0Dno5c78lVWypwNboQIhi6APGJT2K1fphd%2FhHqMg2ZHGEBQROzyKB4zEOI1cyEvttCtXZOUrmhQ5RbqxBUykioj2wOtetpBmiH%2FT4MJ9pvzh39J2lRzHtkPJtgU7zGQ2%2BB8wUg3S%2Bwwju6jl6TthZE%2BOAyN7%2BjYY2U4TMFLtYOwzjIrkNotnRFeFkanlKzLMQkWH6o2MQoP5Kl1pb1TILxRXL4xUs4s%2Bw8ie5A%2F9NYsHKlbujcx8RUbxUOBD9UZOocF%2F7I0K7bJzsKsJRqq9lwUYdR05llaYQxRHmlWRI1VUhGAJcg5mrAqHTHfeWHohkGPq9ud3Ogy5Lssp1lW3ySocn947k9nvJphU05EZJgamH8pc0%2Fd6UqkmXSsed304e20M89b%2BfutED6c%2FLu8mp%2F%2Bg779O5ZXz4VCWw0TtpPiOAtJv2BRjHHH9XIkUQ0Fs6VAWvohTgEvbY3Z%2FMFU5cVoRslM2T%2Fkc6MDr1vF6csxd6UqklD0P%2BkF5bbWb13LQYtiS3jCjC1vSnUnTjC57GlTsSH%2BAcep%2FDDaP281mORzBVkDB4KRb5aSnxzyIRQmUstPJH6Cfko%2F5yeYT%2BWAp2gpsTjbbU5e07j3n%2FR6WO%2B1mufIM6rHPSEqSxgv6TbX1YZuH3HOXTQhDIXhaopg2gP5JlrQC4L2gmD1MKF76%2B5hEqUvfVkWhQqxqaB4kbFmh7W14ObqJyjwbiV0YPlWhzxrDKtsOBEk%2FEeC1TyMx9NLFgQuj4CT%2B9JmOEmlowwW063qmNa6wh%2BaIZdzeljQNkAIryIIgEQx9hiryfXZ3FzMbERMRWLMriuCbx6dbmsCKXz98i1m5OIS8jZ%2F3tBTulFQAPTsEOBdjeiPuicDeXT1RaF%2FQk8%2FUr9fDBMRzn3VYS%2BR5MMh1k9pheiljmn8n6FT51j1bxvl73uFILnevQ97GnnZvlTYv%2FwM%3D)