

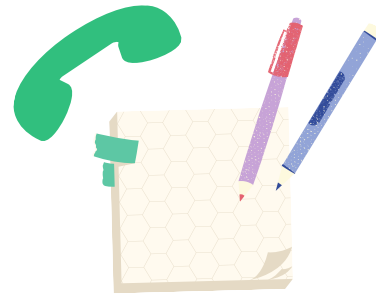
# CALL SUMMARIZATION

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**Team Name:** **#Koki's Kookies**

**Team Members:** **Koki Narimoto (Lead)** **Bryan Xu (Scribe)**  
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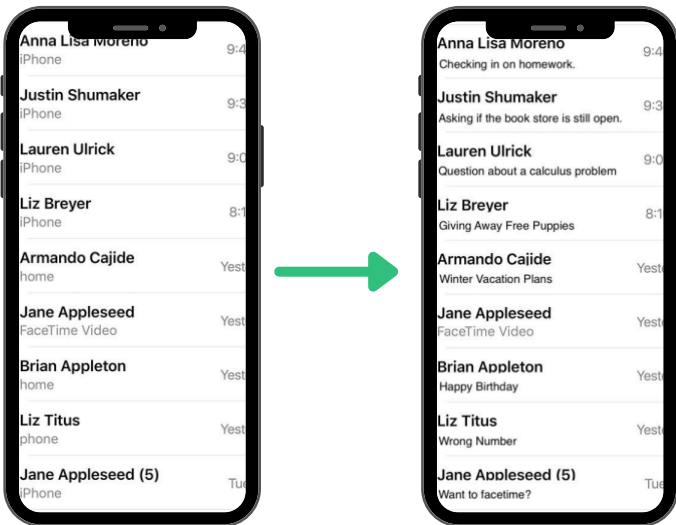
## Background

### Problem

As a salesperson making hundreds of phone calls on a weekly basis, critical information gets lost. Whether this is from lack of notes or incorrect translation between conversations to text, there exists a critical need for call summarization within the field of sales folks.



### Call Summarization



### Motivation

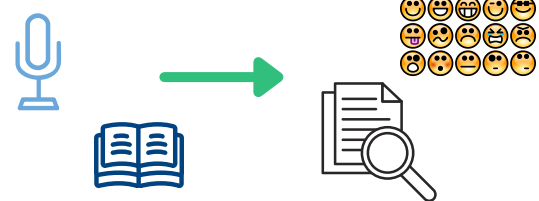
Remembering information from a sales call is extremely important. Regardless of how experienced a salesperson is, there will always be some information that is lost during the phone call. Thus, we need a way to refer back to our calls and recover this lost information. By using state-of-the-art speech-to-text and summarization technology, we want to give YOU the upper hand in securing sales!

### Existing Solutions

To this day, there are very few solutions to this issue despite there being an apparent demand for such a product: especially within the sales force. The main reasoning for there being a lack of existing solutions is that spoken language adds several degrees of complexity to the problem. Some reasonings for the complexity include the addition of filler words, accents, style, and background noise in conversations. Thus, the following presents some related solutions; however, none are identical to this product.

#### • Summarizebot

- SummarizeBot allows for real-time summarization and sentiment or intent analysis of audio and text data
- Pros:
  - Real-time audio processing and summarization
  - Keyword extraction
  - Variable summary size
  - Supports multiple languages including
    - English, Chinese, Russian, Japanese



#### #KOKI'S KOOKIES TEAM

UCSB: Narimoto, Xu, Garg, Mahajan, Lim, Wang  
Invoca: Ron, Hedberg, Hall, Phan, Rousso



- Costs:
  - Free tier (14 days only):
    - 5000 included requests
    - Up to 5 API calls per minute
    - 3 MB max file size
  - Custom Tier
    - Unlimited requests
    - Custom API Calls limit
- Standard tier (\$179/month)
  - 120,000 included requests
  - Up to 20 API calls per minute
  - 10 MB max file size

• **Cognistx**

- Cognistx is for companies to allow them to look for specific things that the consumer is saying. It can also format that speech into text form to allow them to have easy access to the information. Can also do call summarization and understand the overall call sentiment.
- Pros:
  - Able to pick out specific answers and convert them to text
  - Can fully summarize and find basic emotions of the call
  - Intended for customer service
- Cons:
  - Only a prototype

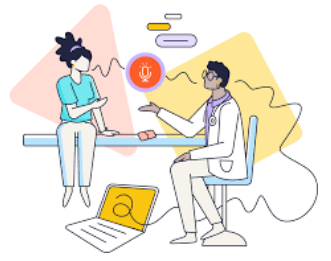


COGNISTX™



• **Abridge**

- Abridge is a service that transcribes medical appointments. It easily gives summarizations of doctor's visits and returns a format that makes it easy to share with patients
- Pros:
  - Free app for patients
  - Fast transcriptions and summarization
  - Highlights and emboldens keywords to make summarizations easier to read
- Cons:
  - Only limited to the medical field



## Project Outcome

- The intended goal of this project is to create a Web App where the salesperson can view the call logs and the corresponding call summaries for each call in order to determine the customers' intent in the product



## Solution Implementation

- Incorporate IBM Watson's cloud-based speech-to-text APIs to transcribe a conversation to text
- Incorporate natural language processing and machine learning techniques (i.e. sentiment analysis) to create an accurate summarization of the transcription



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- Research/utilize API's to make summarizations easily readable and create visualizations to give users more options



## Potential Technologies

- API
  - IBM Watson's cloud-based speech-to-text APIs
  - Invoca's API for call routing
- AI/ML
  - Python (Sentiment Analysis)
- Full-Stack WebApp
  - React JS (front end)
  - Node JS (back end)
  - SQL or MongoDB
- Testing/Deployment
  - Heroku
  - Github



## Milestones

- Epic: 10/11-10/24
  - Research tools and technologies
  - Set up an end-to-end framework using ReactJs, NodeJs, and SQL/MongoDB
  - Develop a basic platform to show call logs and summaries (MVP)
  - Automate Testing and Deployment utilizing Github and Heroku
- Release 1: 10/25-11/14
  - Incorporate IBM Watson's speech-to-text API to transcribe the calls
  - Incorporate Invoca's call routing API to connect calls to the web app
  - Make a rough summary of the calls through the utilization of word clouds and "important" words, i.e. filtering out words like "the, a, is," etc.



- Release 2: 11/15-11/21
  - Make summary more comprehensive and concise using ML(Sentiment Analysis)
- Release 3: 11/22-12/05
  - Improve platform UI/UX to make it simple, intuitive, and visually appealing

