

FINAL ON STAGE



AT



# Discover AI Challenge



Microsoft agorize



SMART CITIES



RETAIL



HEALTHCARE



FINANCIAL SERVICES

TherapAI  
Team TL2K

*“AI can help support mental health professionals in doing their jobs. Algorithms can analyze data much faster than humans, can suggest possible treatments, monitor a patient’s progress and alert the human professional to any concerns. In many cases, AI and a human clinician would work together.”*

– Forbes



# TherapAI

# TODAY'S AGENDA



1  
TEAM

2  
SURVEY  
RESULTS

3  
PROBLEM  
STATEMENT

4  
OBJECTIVES

5  
SOLUTION  
ARCHITECTURE

6  
BUSINESS  
MODEL

7  
BENEFITS

# THE TEAM



**KARTIKEYA  
LAKHARPAL**

24 yo

**McGill University**

Master of Management in Analytics

**NMINS University**

BTech in Computer Science



## Experiences

**Social entrepreneur**

**EY India**

## Interests

**Tech blogs**

**Formula 1**



**TAMAR BULKA**

23 yo

**McGill University**

Master of Management in Analytics

**McGill University**

BS in Comp. Sci. & Economics



## Experiences

**Rank Media**

**Euler Hermes**

## Interests

**Soccer**

**Foodie**

# THE TEAM



**KYLE GOMES**

23 yo

**McGill University**

Master of Management in Analytics

**Boston University**

BS in Business Administration



## Experiences

**DBS bank**

**Autodesk**

## Interests

**Soccer**

**Formula 1**

**Movies & TV shows**



**LEA SENEQUIER**

23 yo

**McGill University**

Master of Management in  
Analytics

**HEC Montreal**

BBA in Finance



## Experiences

**Juniper**

**Pratt & Whitney**

## Interests

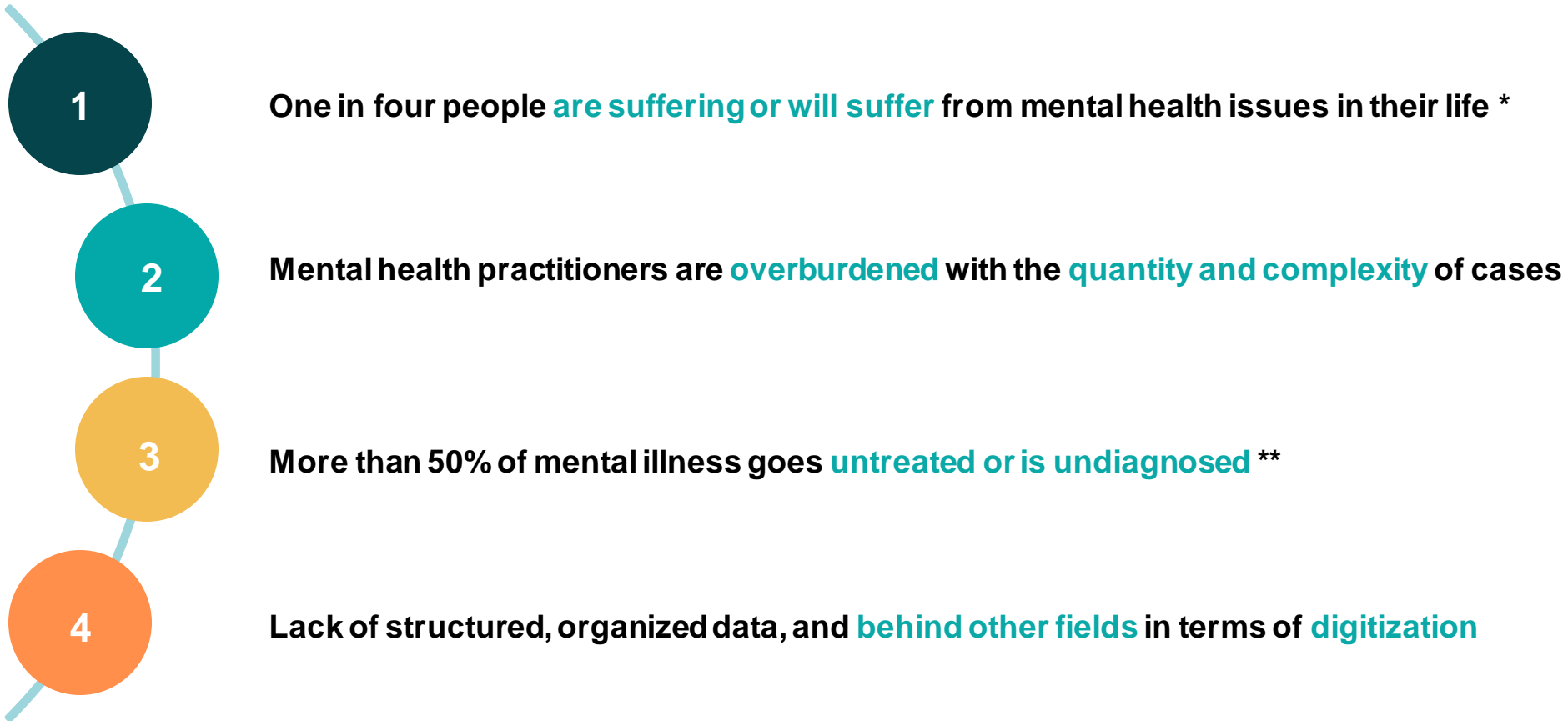
**Running**

**Horse Riding**

**Health & Wellness**



## CHALLENGES FACED BY THE MENTAL HEALTH INDUSTRY





# SURVEY RESULTS



We contacted and sent a survey to different types of mental health practitioners such as doctors, counselors, and psychologists, and collected the following insights



All respondents stated that they use **hand written notes** during patients' sessions



70% of respondents said they **refer to existing medical literature** to gain insights into a patient



All respondents think that there is **scope for further digitization** in the mental health industry



67% of respondents meet between **35 and 50 patients** per week

***“A great way to increase accessibility and reduce cultural barriers ”***

*Gabrielle, Social Worker*

***“This will enable overcoming biases and help practitioners build trust faster with patients”***

*Ushana, Director of an NGO*

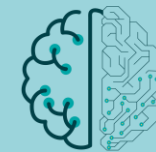
***“There is always room for improvement in mental health”***

*Mark, Social Worker*

***“This tool could be adapted to many type of therapy such as Creative Art Therapy”***

*Blanche, Family Psychotherapist*

# OBJECTIVES



1

Digitize data on mental health, creating a resource for **future developments** and **research** on the topic

2

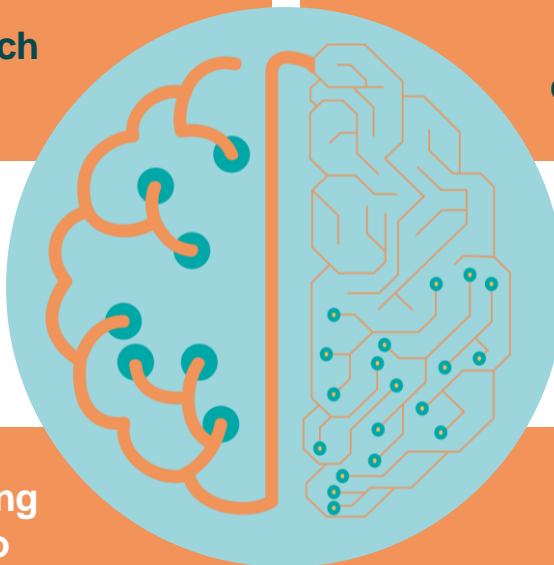
Improve patient tracking platforms for mental health practitioners, enabling them to make **diagnoses** and **treatment plans** more efficiently

3

Assist mental health practitioners by recording and processing patient data, enabling them to complete their work **more efficiently** and attend to **more patients**

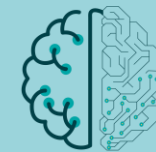
4

**Reduce bias** in mental health treatment, and **eliminate barriers to communication** between physician and patient





# SOLUTION



1. **Recording** of sessions with patients



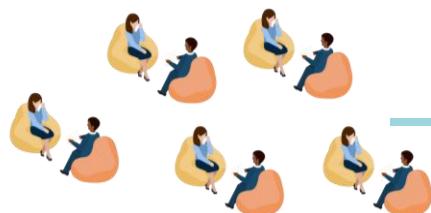
2. Automatic **transcription** and **digitalization** of sessions



3. Automated **dashboard** to highlight key features of daily sessions



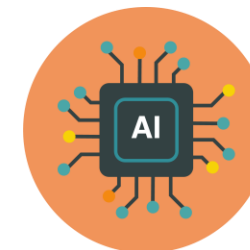
4. Automatic **dashboard update** & **trends analysis**



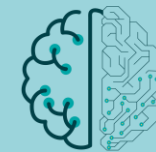
5. Suggestion of possible **interpretation** and **diagnosis** based on the analysis of transcripts



6. Increase in the availability of **structured data** in the mental health field



# SOLUTION ARCHITECTURE



Mental Health  
Practitioner



Communication



I.O.T  
Device

Session  
Recording



Speech to Text  
A.P.I



Transcript



Python



PowerBi

Session Insights



Long term Insights



Patient(s)



Azure Cache



Predictive  
Model





# Therap AI

Select a session to review

4

Session Duration

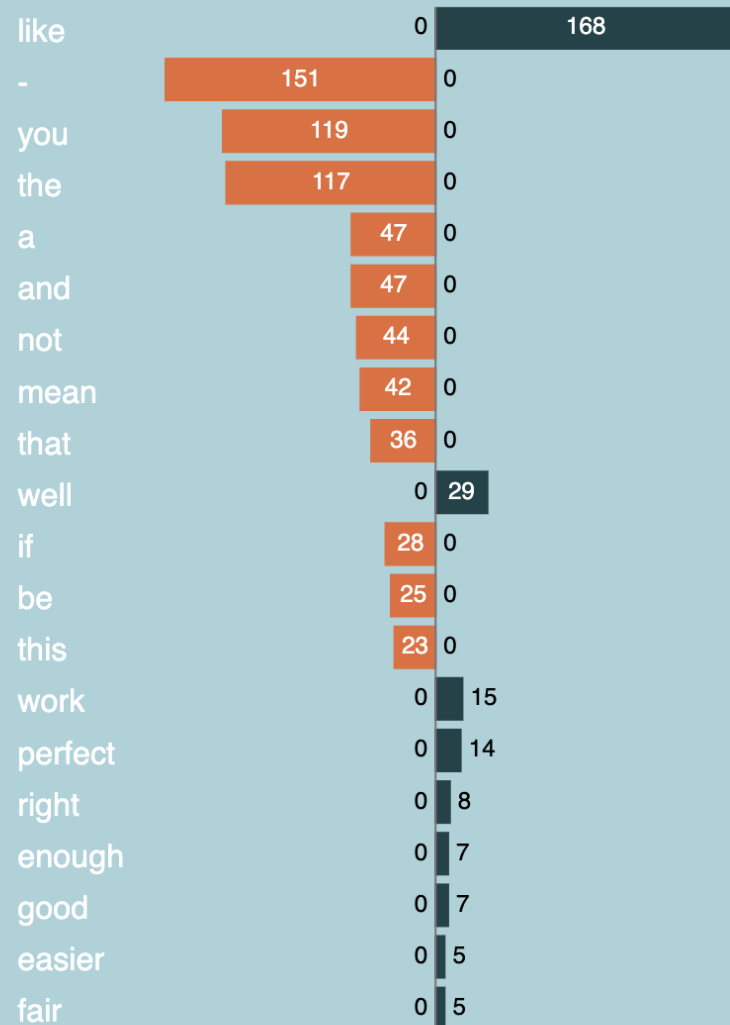
47 min

Session Date

28.02.2020

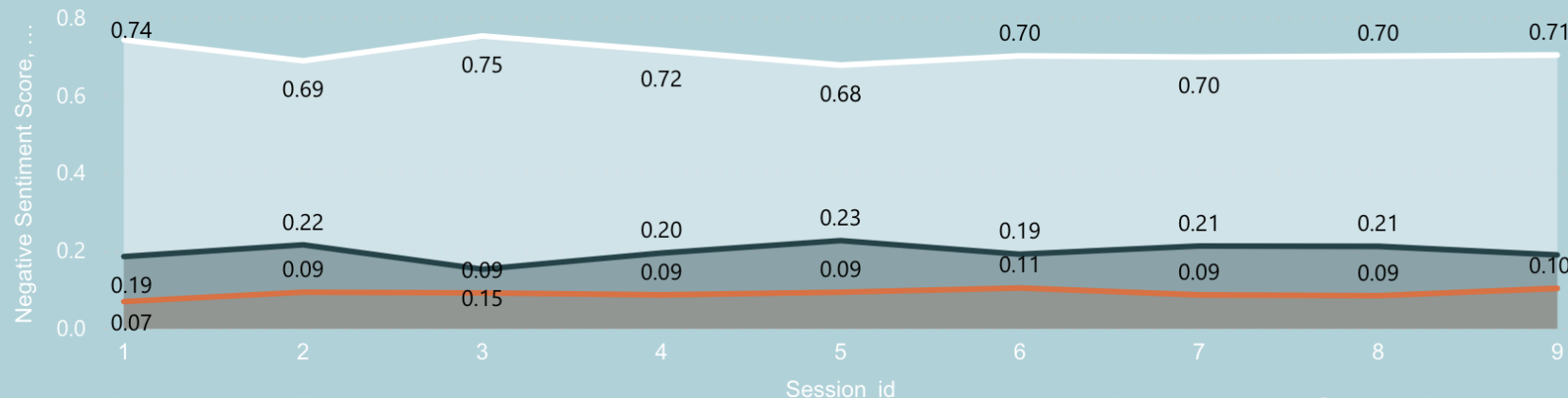
## Frequency of Words

● Negative ● Positive



## Trend of Sentiments over the Sessions

● Negative Sentiment Score ● Neutral Sentiment Score ● Positive Sentiment Score



## Prominent Words



## Select Type of Word

Adjectives

Noun

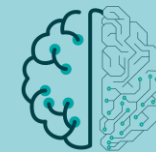
## Select Relative Frequency

1

18

\*Level 18 is the words with Maximum Frequency  
\*Level 5 is words with Minimal Frequency

# BUSINESS MODEL



## Key Activities

- Transcribe and dashboard therapy sessions
- Implement NLP to identify patterns in speech and map people with diagnosis



## Key Partners

- Microsoft & Azure
- Database owners
- Technology vendors
- Regulatory agencies
- Investors



## Key Resources

- Azure Platform
- Users/Experts input
- Human capital



## Value Proposition

- Improve efficiency and accuracy for practitioners
- Increase accessibility of mental health services



## Customer Segments

Mental health practitioners:

- Psychiatrist, Psychologist, Clinical Social Workers, Licensed Professional Counselor
- Hospitals
- School, Universities



## Cost Structure

- Database access and security costs
- Computing power
- Azure Platform Subscription
- Hiring assistance from medical practitioners in developing model



## Revenue Streams

- B2B model: sales to customer segments
- Subscription model for extra features
  - Personalization of the UI for large client and their needs & maintenance



Mental health  
patients



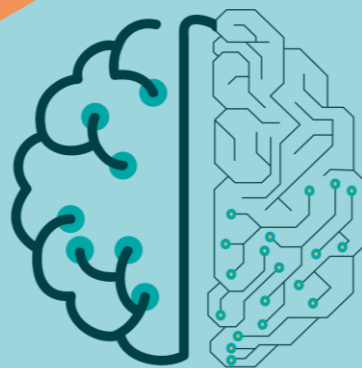
Mental health  
professionals



People seeking  
mental health help

- Expedite the **diagnosis**
  - ✓ Help practitioners **see trends** they might have missed
  - ✓ **Increase objectivity** and **reduce biases** in mental health assessments
  - ✓ Seeing some trends earlier could help the practitioner **build trust faster** with patients
- Improve **diagnosis accuracy**
  - ✓ The more patient sessions are recorded, the more **efficient** the model will become
  - ✓ **Reduce cultural barriers** between patients and professionals by training models on a diverse dataset
- Maintain **digitized record** of the patient which is usually difficult and time-consuming to get

Thank You!



TherapAI