

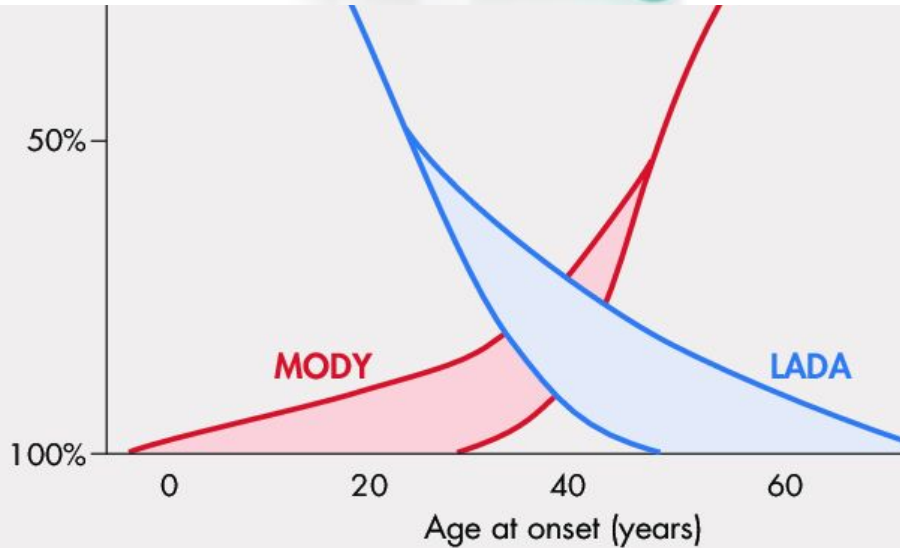
Topics of interest for type 1 diabetics on social media

By Adriana Vesa



Type 1 Diabetes

We believe it is important to understand the sources of stress and the topics that present interest to people affected by type 1 diabetes, as diabetic distress can impact the condition itself and it is studied as such.





A word cloud featuring various terms related to diabetes management and technology. The words are arranged in a circular pattern, tilted at different angles. The terms include: 'insulin', 'insurance', 'blood', 'diabetic', 'night', 'days', 'diabetes', 'pump', 'CGM', 'dose', 'A1C', 'Dexcom', 'Libre', 'sugar', 'pod', 'Omnipod', and 'Omni'. The colors used for the words are primarily green, yellow, orange, and red.

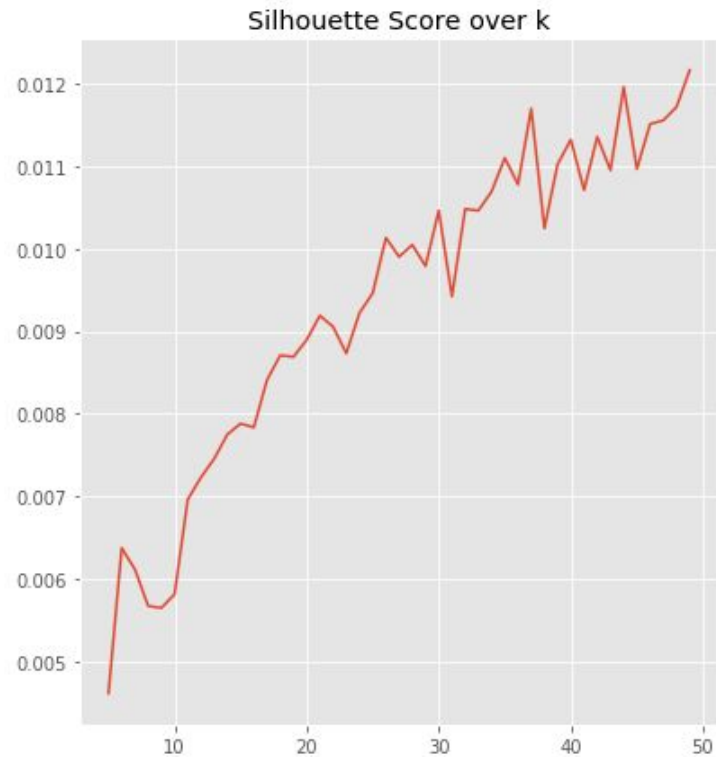
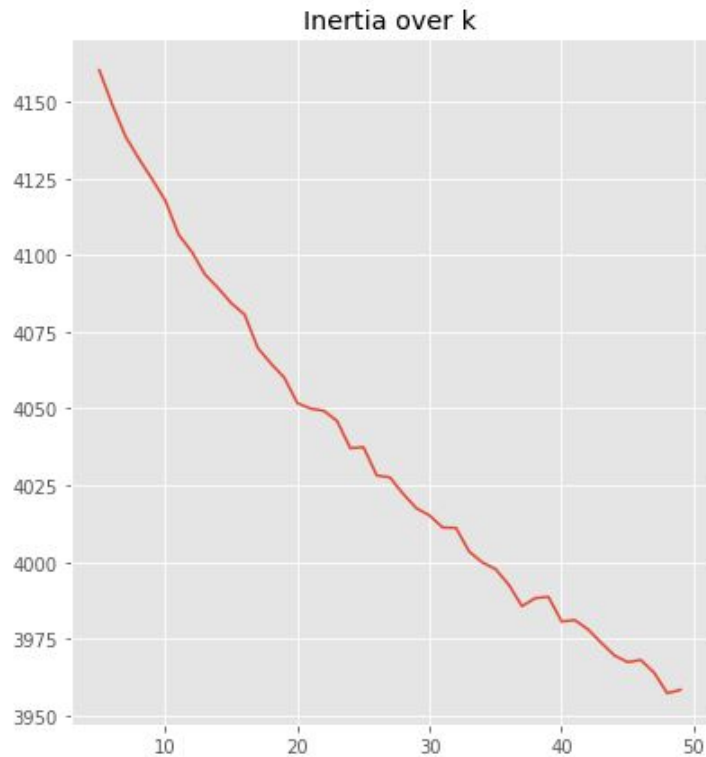
- We will use Reddit - and collected posts from the past 100 days starting on February 18th 2020.
- We will analyze these using unsupervised learning.
- We will use K-means to explore the clustering of the data we collect.
- We will use the silhouette score to explore the best clustering point (number of clusters).

Acquiring data, pre - processing and model prepping

- we used reddit push-shift API to collect the data
- 4400 posts
- we created our text to be analyzed by adding together the title and the post itself.
- we tokenized the text column.
- we apply CountVec and TFIDF - we choose TFIDF.



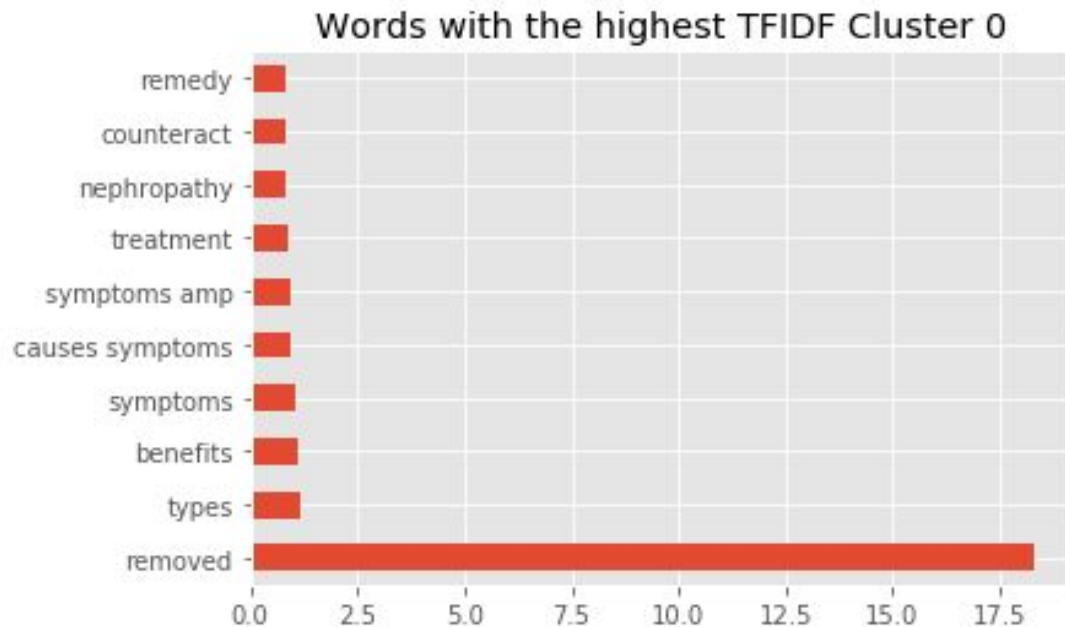
Inertia and Silhouette scores on K (clusters) from 5 to 50



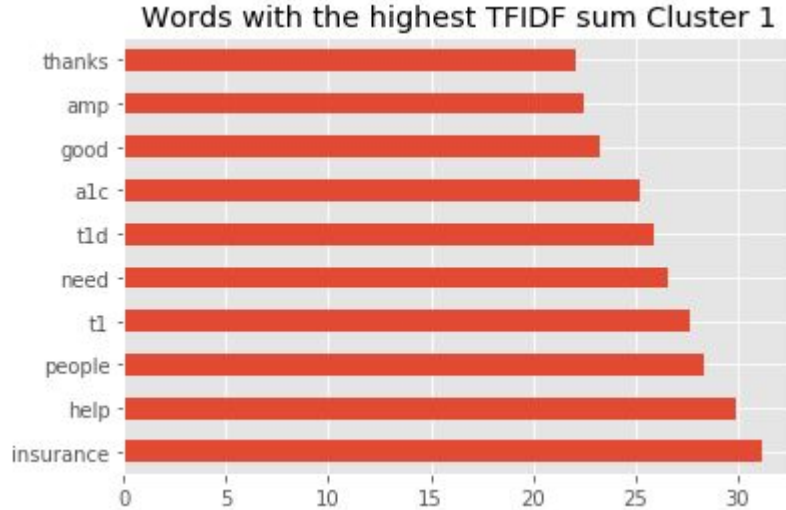
cluster	posts	key word
0	33	Removed
1	1884	Insurance
2	139	Libre
3	483	Dexcom
4	595	Pump
5	1149	Low

- We choose $k = 6$ clusters.
 - We observe the clusters look relatively well distributed.
 - We investigate each cluster.
-

Cluster 0 - “removed” - 33 posts



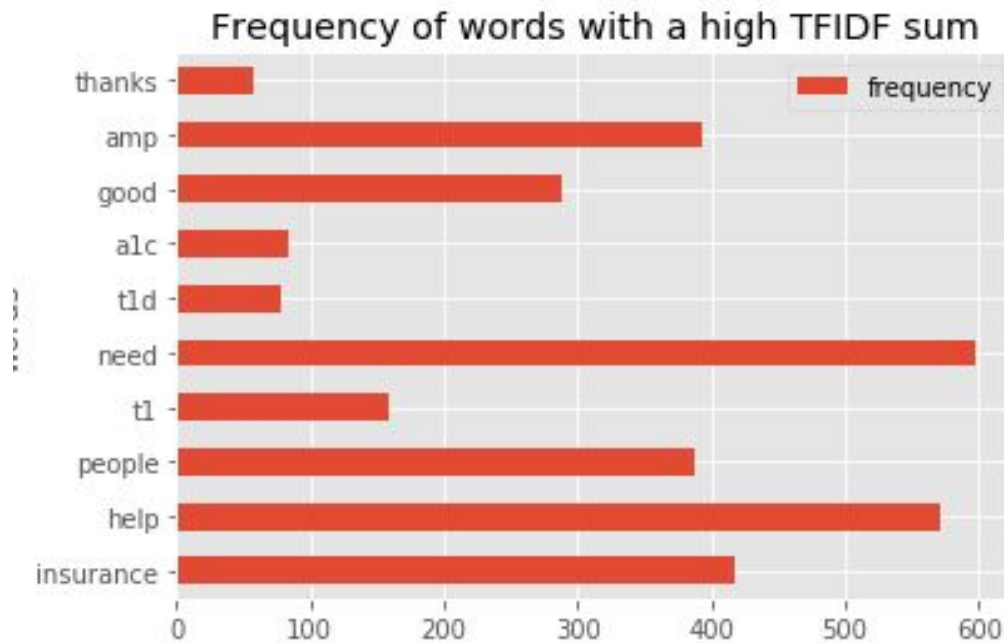
Cluster 1 - “insurance” - 1884 posts



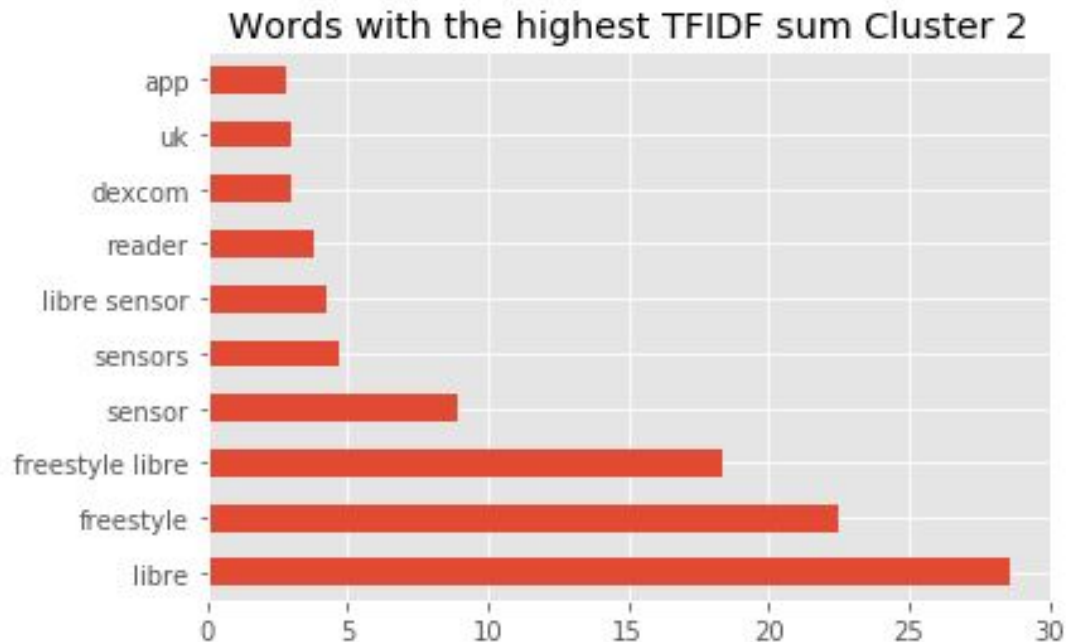
amp
need
insurance
t1d
people
thanks
good
help

Cluster 1 - “insurance”

amp
need
t1
insurance
people
thanks
good
help



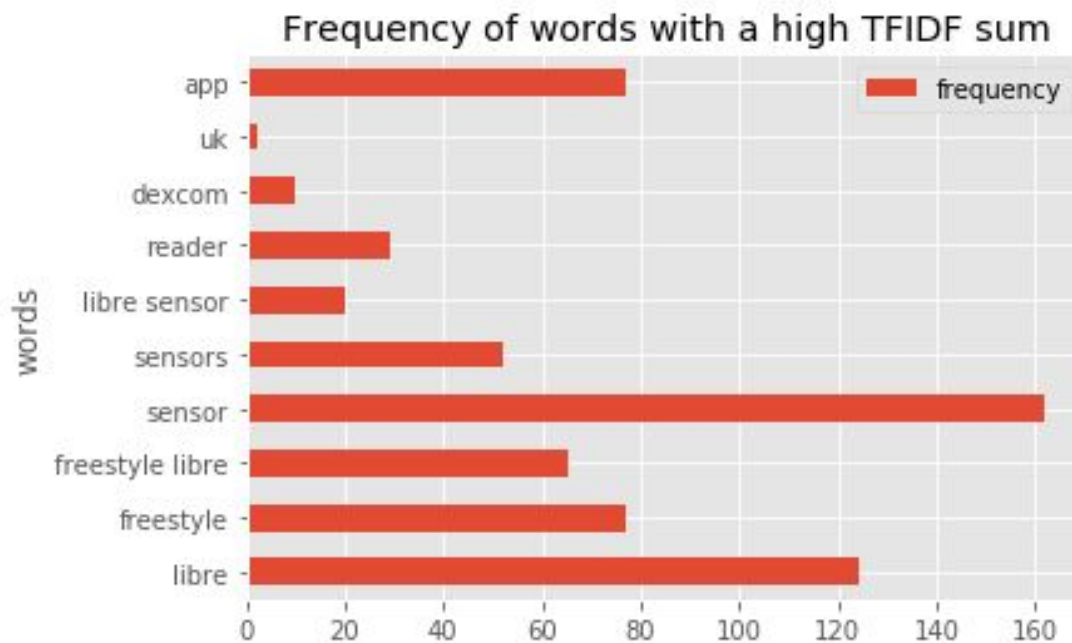
Cluster 2 - “Libre” - 139 posts



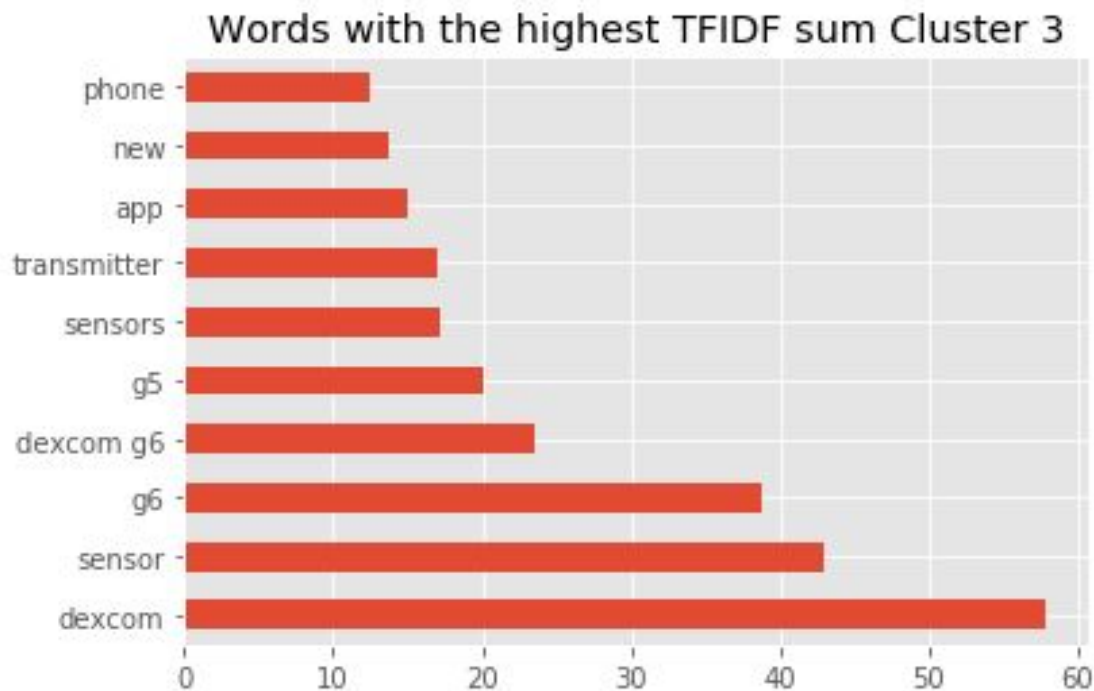
dexcom
freestyle
reader
app
libre
sensor
sensors

Cluster 2 - “libre”

dexcom
libre
freestyle
app
sensors
reader
sensor



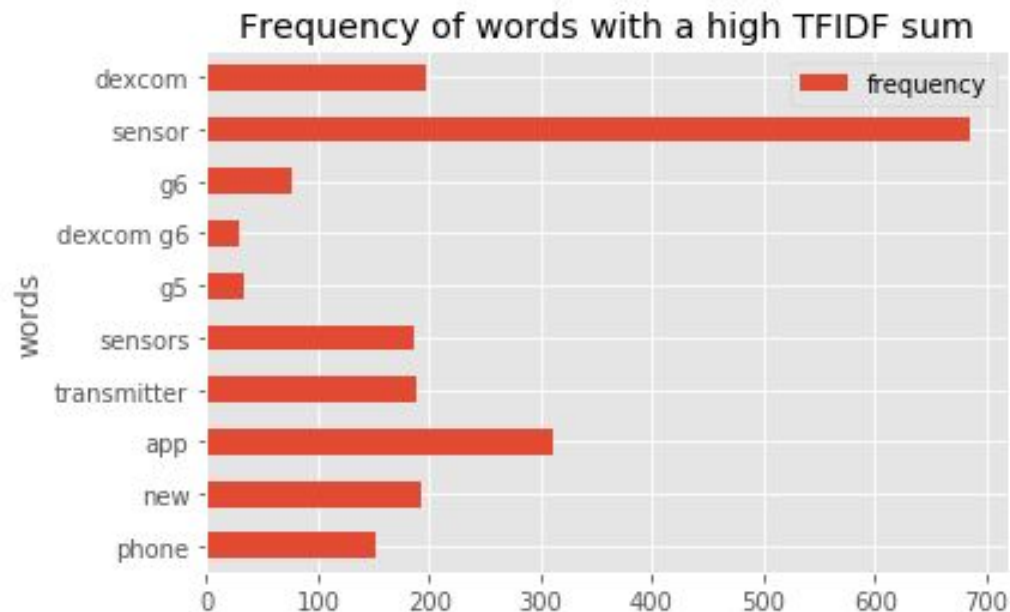
Cluster 3 - “dexcom” - 483 posts



dexcom
dapp
transmitter
new
sensors
psensor
phone

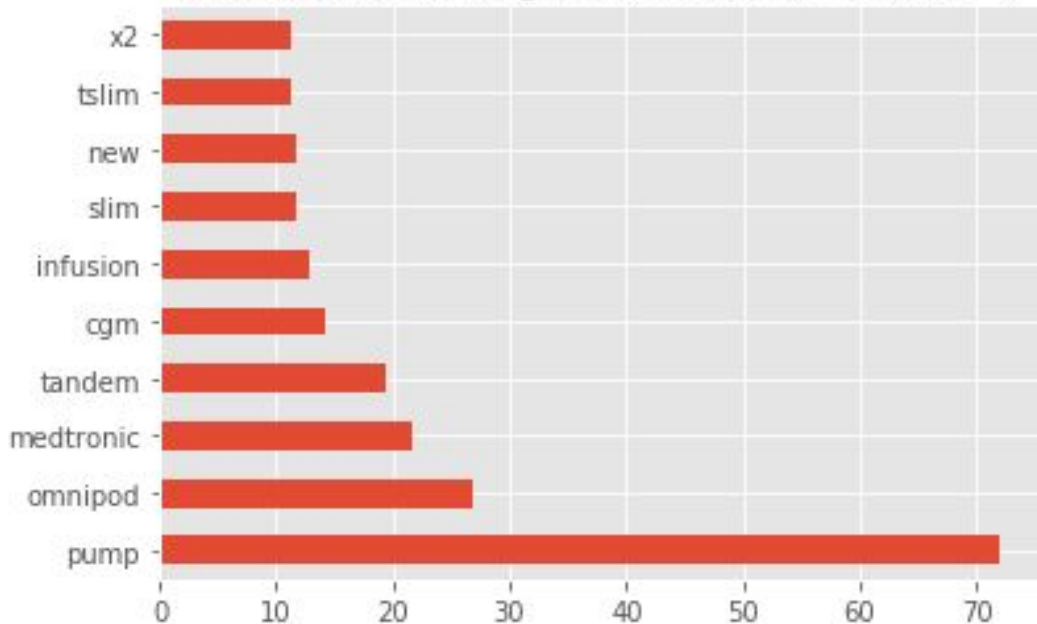
Cluster 3 - “dexcom”

dexcom
phone
transmitter
app
sensor
sensors
new



Cluster 4 - “pump” - 595 posts

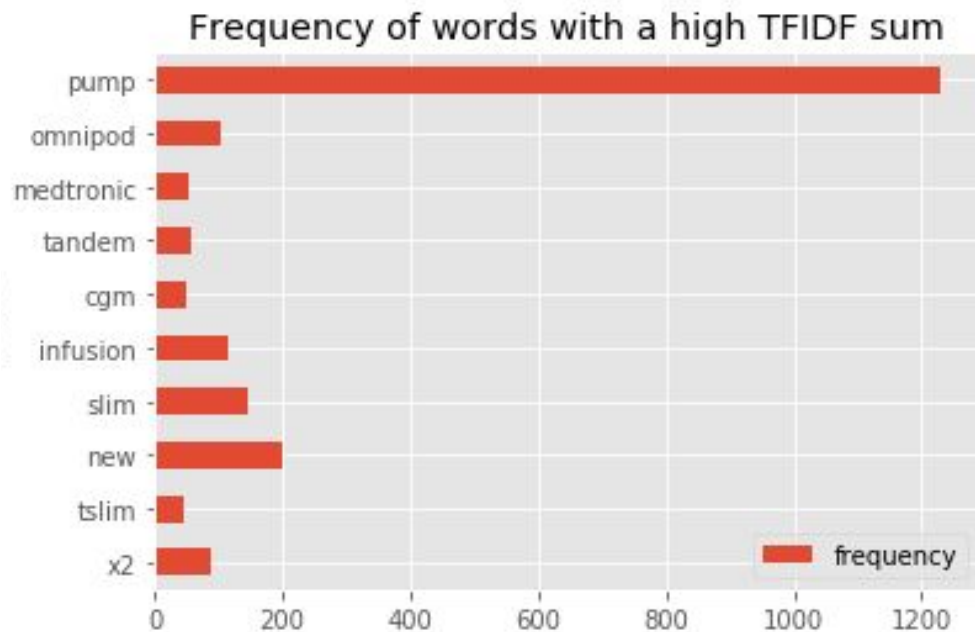
Words with the highest TFIDF sum Cluster 4



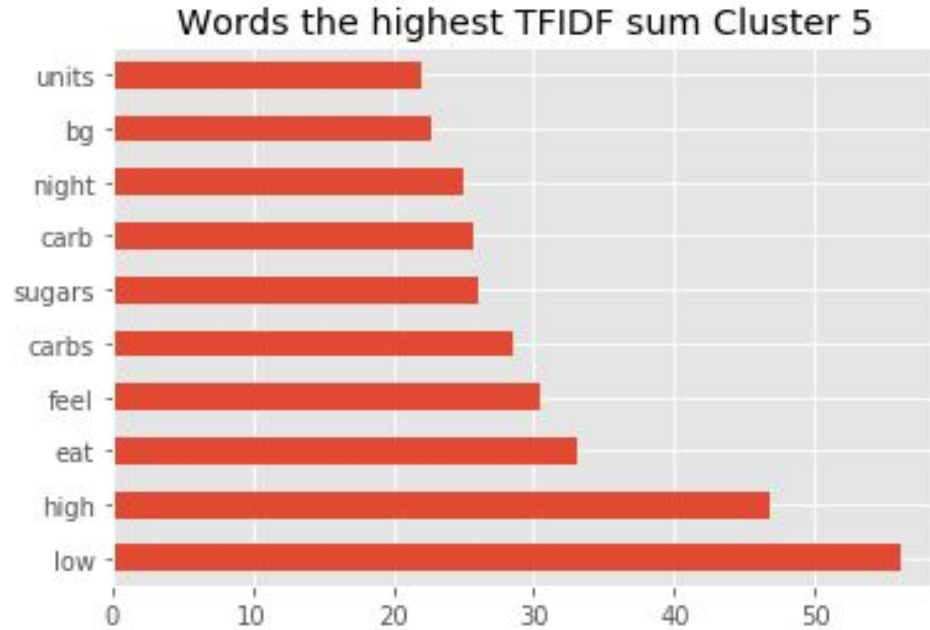
word cloud visualization of terms associated with Cluster 4, including pump, medtronic, infusion, tandem, cgm, new, tslim, slim, and dund.

Cluster 4 - “pump”

omnipod
dund
slim
medtronic
new
tslim
infusion
tandem
x2



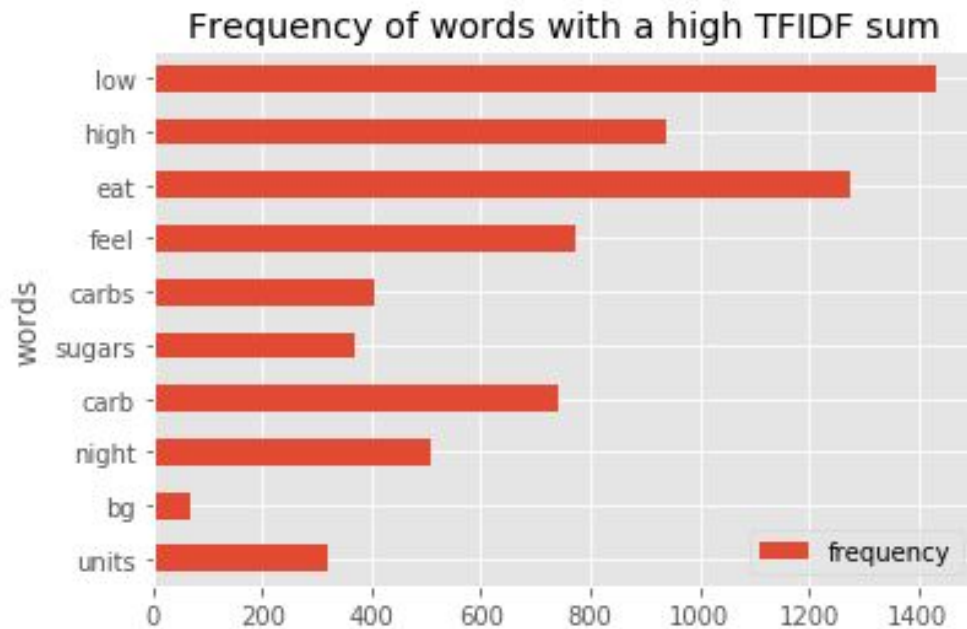
Cluster 4 - “low” - 1149 posts



sugars
night
high
eat
carb
low
units
carbs
feel

Cluster 5 - “low”

sugars
night
high
eat
carbs
low
units
carb
feel



Drawbacks

Conclusions

Further Steps

- Number of posts / Removed posts
- Categories :

Insurance

Technology

Managing lows

- Acquire more posts
- Sleep study.
