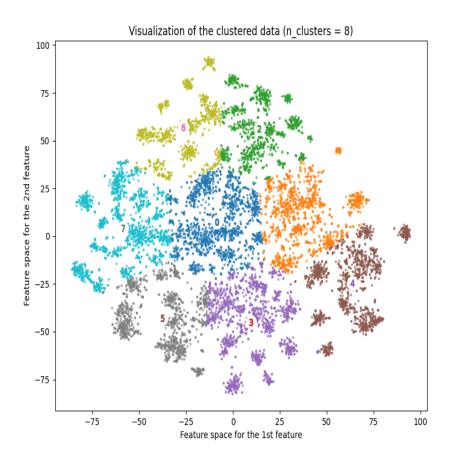
## Alternative with 8 clusters:



## Cluster 0:

cell 2773 technology 2038 model 1919 disease 1441 proposed 1324 virus 1262 potential 1251 phase 1194 small 1143 device 1136 provide 1134 patient 1127 innovation 1018 design 1012 used 1004 novel 1003 method 987 approach 986

```
business 949
      process 949
Cluster 1:
      social 2408
      community 2118
      network 2042
      health 1244
      model 1194
      public 1180
      information 1089
      policy 1046
      understanding 995
      work 987
      pandemic 978
      group 964
      change 954
      provide 927
      risk 919
      behavior 904
      researcher 870
      workshop 857
      analysis 841
      individual 838
Cluster 2:
      specie 2010
      plant 1988
      change 1632
      community 1304
      understanding 1152
      protein 1077
      gene 1071
      model 1035
      ecosystem 998
      soil 984
      process 903
      environmental 902
      provide 880
      training 838
      environment 832
      undergraduate 815
      population 796
      approach 775
      food 738
      interaction 730
Cluster 3:
      learning 2785
```

model 2314 application 1764 algorithm 1590 network 1415 design 1412 computing 1353 technology 1317 machine 1296 user 1149 method 1142 technique 1136 language 1125 problem 1094 information 1092 software 1080 human 1069 ai 1036 approach 1018 tool 1007 Cluster 4: stem 5508 learning 3653 education 3089 teacher 2688 engineering 2238 school 1885 community 1857 university 1653 faculty 1614 practice 1551 undergraduate 1526 experience 1502 college 1404 career 1396 course 1349 technology 1330 field 1291 conference 1281 professional 1249 knowledge 1193 Cluster 5: quantum 3303 theory 1865 model 1670 problem 1658 physic 1317

```
method 1300
      pi 1201
      energy 1142
      application 1113
      group 1044
      material 1039
      structure 974
      field 960
      flow 918
      understanding 893
      property 869
      equation 865
      analysis 848
      geometry 804
      goal 787
Cluster 6:
      water 2135
      model 1564
      ocean 1492
      change 1264
      climate 1231
      process 1126
      understanding 1091
      earth 917
      carbon 876
      provide 835
      ice 809
      community 791
      used 767
      arctic 724
      earthquake 719
      surface 696
      result 686
      global 685
      work 650
      membrane 643
Cluster 7:
      material 4636
      property 1771
      process 1605
      structure 1522
      energy 1478
      chemical 1459
      understanding 1374
      high 1226
      used 1203
```

field 1195 model 1187 design 1166 chemistry 1162 undergraduate 1150 application 1147 polymer 1123 university 1109 manufacturing 1056 fundamental 1045 metal 987