



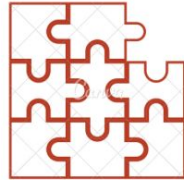
DRISHYA.AI

DEEP RECOMMENDATIONS & INTER-STATE HYBRID ANALYSIS

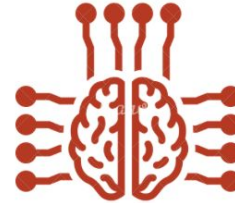


THE PROBLEM

There is an acute shortage of data,
which is not being uploaded to the
government servers.



Current Healthcare Data Systems
(IDSP) lack smart predictive solutions





SOLUTION

One problem, 2 fold solution:

A predictive policy maker dashboard

powered by data from

A mobile application for every doctor



**DECISION MAKING
SIMPLIFIED.**

FEATURE PREDICTIONS



DISEASE HOTSPOTS

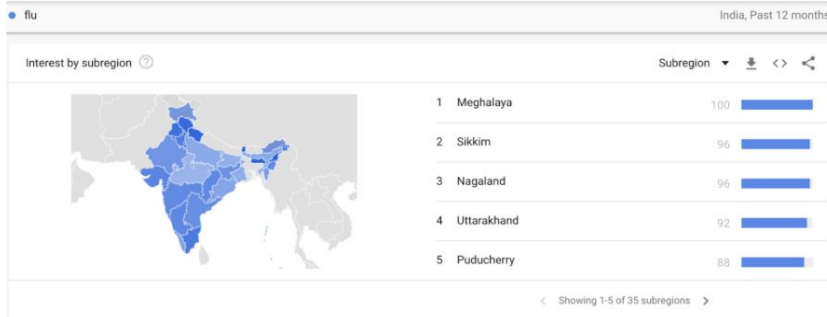
Intuitive display for policy makers to visualise disease hotspot predictions made by neural networks.



OPTIMAL SUPPLY CHAIN

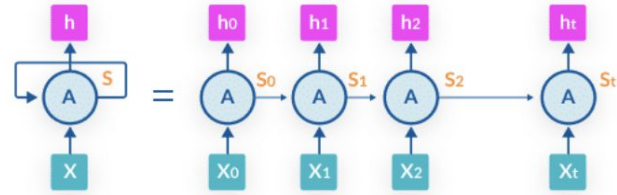
Comparing predicted outbreaks with hospital resources available, the algorithm suggests the most cost-effective distribution of resources.

NEURAL NETWORKS



DATA: GOOGLE TRENDS

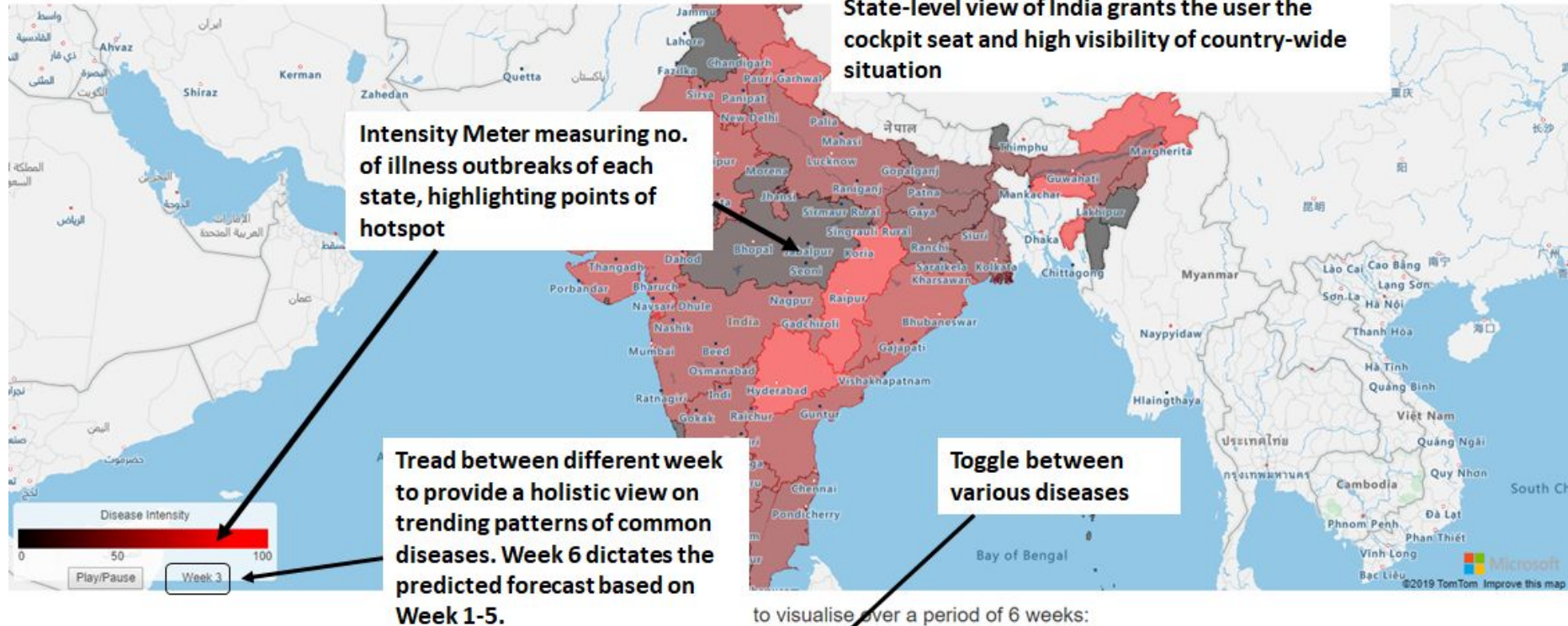
Ubiquitous source representative of
Indian search behaviour
Time-series data of trends per
state, week and search volume

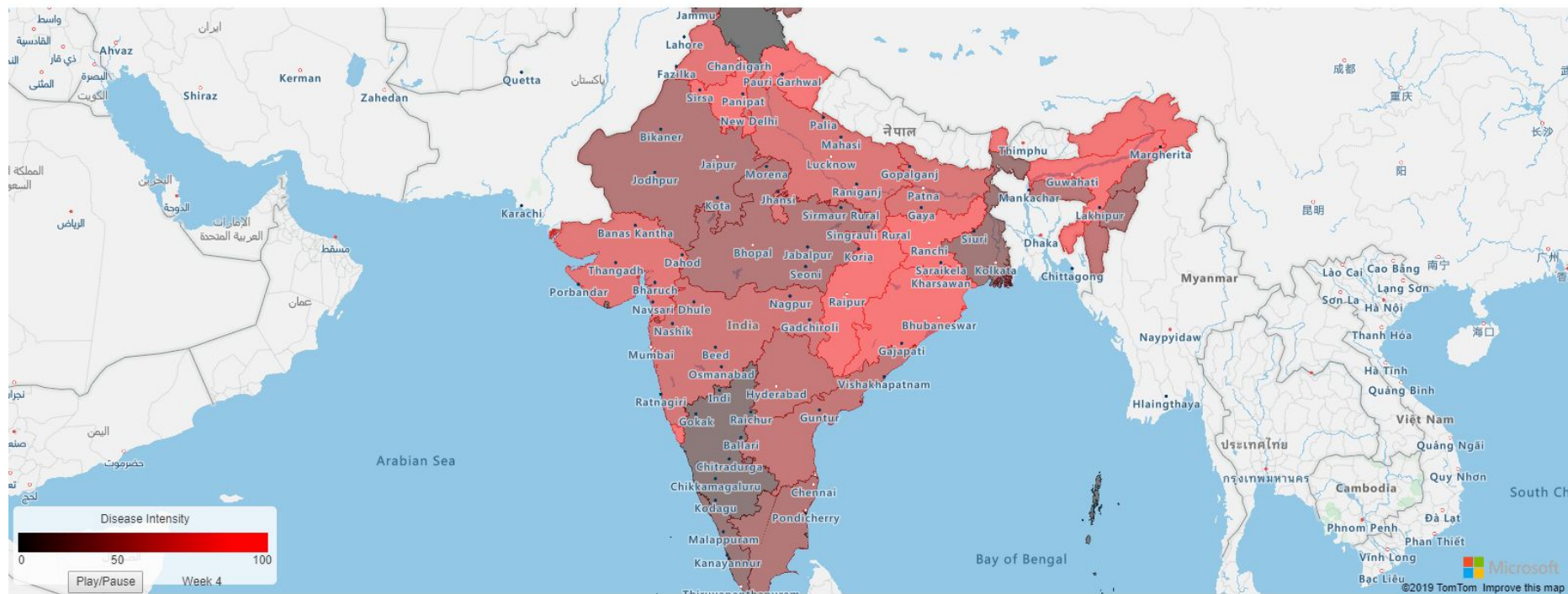


Unrolled Recurrent Neural Network

MODEL: LONG-SHORT TERM MEMORY

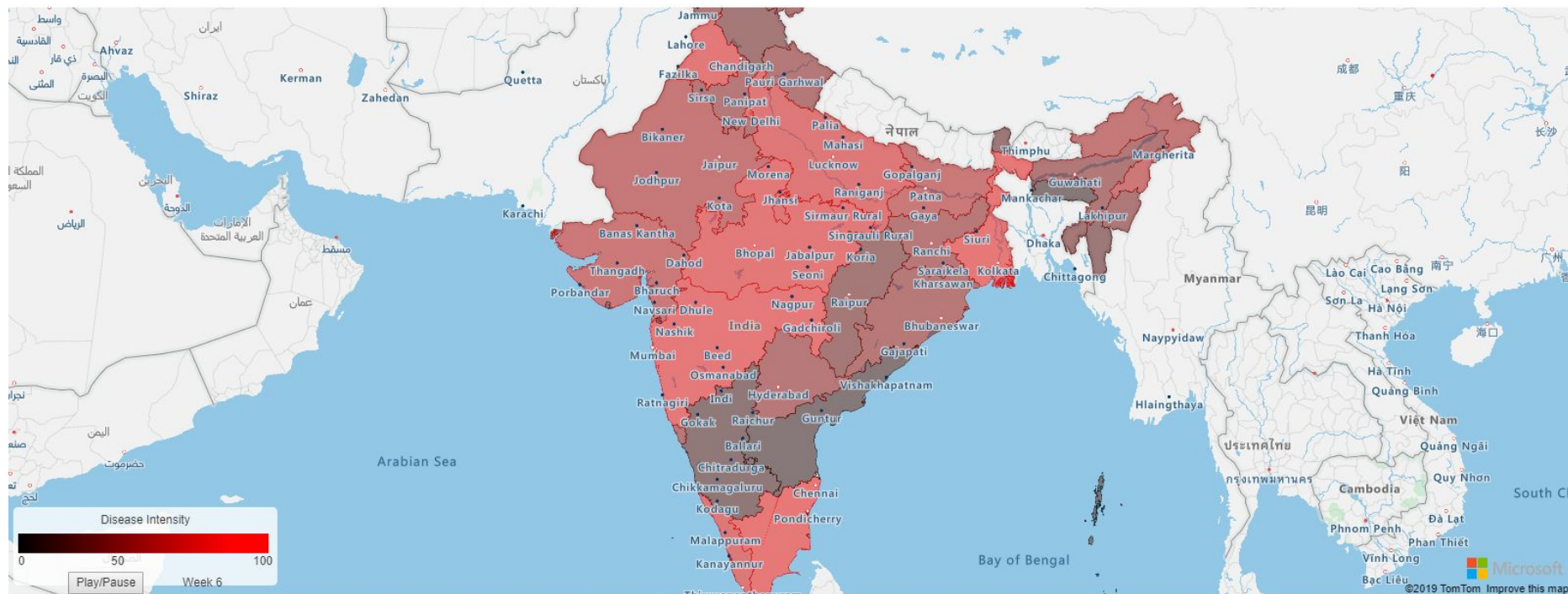
Using an advanced neural model that
captures long-term and short-term
patterns in the data.





Select a common disease trend to visualise over a period of 6 weeks:

Dengue ▼



Select a common disease trend to visualise over a period of 6 weeks:

Dengue ▼

Red color indicates shortage of medical supplies, while blue color is a sign of healthy excess.

This district-level dashboard empowers the user to decide on practical actions to take to optimize allocation of medical resources.

Dotted lines represent recommended optimal movement of resources between states, taking into consideration various demand and supply factors such as cost of transportation.



HotSpots & Resouce Allocation

84%

ACCURACY

The spread of 5 diseases over 35 states predicted was found to be 84% correlating with the actual data retrieved next week.



A male doctor with grey hair and a goatee, wearing a white lab coat over a light-colored button-down shirt. He has a blue stethoscope around his neck and a white ID badge on his left chest. He is standing in a brightly lit hospital hallway with blue walls and a white ceiling. The background is slightly blurred, showing the perspective of the hallway.

**DATA ACQUISITION
SIMPLIFIED.**

DRISHYA - THE DOCTOR APP

VISIT RECORDING



The doctor can help in easy tracking of patient visits for contributing to database, helping in predictions.

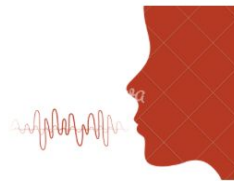
FRAUD PREVENTION



The complete system is made fraud proof using **Aadhar UID** verification. The doctor just scans the QR code on Aadhar which gets auto-verified.

EASY VOICE-BASED INPUT

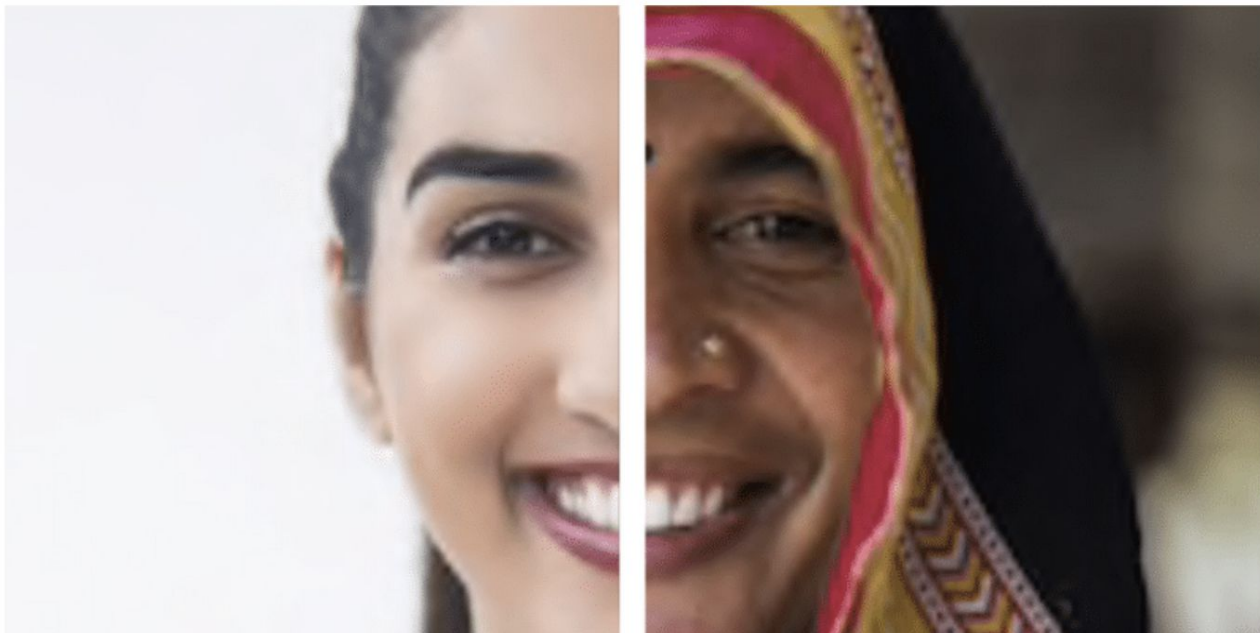
The seamless data entry by doctor through vocalising the name of the disease to log the visit. We can set a daily goal and give incentives.



OUTBREAK INFORMATION

The doctor also can see the number of cases recorded near him, without infringing any privacy of the patients.





DIGITIZING RURAL HEALTHCARE

70%

Of rural healthcare (**62 Crores**) is
provided by Uncertified Rural
Practitioners (URP).

RURAL HEALTHCARE

Only 28% of rural population
has access to the Internet.

28%

RURAL HEALTH CARE SYSTEM IN INDIA

Community Health Centre (CHC)

A 30 bedded Hospital/Referral Unit for 4 PHCs with Specialised services



Primary Health Centre (PHC)

A Referral Unit for 6 Sub Centres 4-6 bedded manned with a Medical Officer Incharge and 14 subordinate paramedical staff



Sub Centre (SC)

Most peripheral contact point between Primary Health Care System & Community manned with one MPW(F)/ANM & one MPW(M)

INCLUSIVE APP FOR ALL



AUXILLARY STAFF ONBOARDING

Certified Doctors can register medical
staff & URPs without official
healthcare documents onboard
platform using Aadhar



CALL HOTLINE

Auxillary staff in low data settings can
report diseases using missed calls to a
toll-free hotline

DEPLOYMENT COSTS?



COST

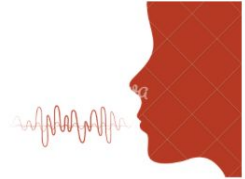
Application is free

Managing toll-free
number \$

TIME

6-12 months for scale

Training of medical staff



RESOURCES

Online database server

\$\$



SINGAPORE INDIA HACKATHON 2019

Solutions for
Sowing the
Part

28th - 30th

Venue



THANK YOU!

TEAM 4 - CODERS IN SING

State Name	Prediction Accuracy
Andaman and Nicobar Islands	0.7996
Arunachal Pradesh	0.8390
Andhra Pradesh	0.7736
Assam	0.8442
Bihar	0.8126
Chandigarh	0.8567
Chhattisgarh	0.8735
Daman and Diu	0.8256
Delhi	0.8685
Dadra and Nagar Haveli	0.7569
Goa	0.8619
Gujarat	0.8588
Himachal Pradesh	0.8655
Haryana	0.8224
Jharkhand	0.8086
Jammu and Kashmir	0.8179
Karnataka	0.8752
Kerala	0.8640
Maharashtra	0.8525
Meghalaya	0.7915
Manipur	0.8157
Madhya Pradesh	0.8348
Mizoram	0.7561
Nagaland	0.8937
Odisha	0.8513
Punjab	0.8684
Puducherry	0.8712
Rajasthan	0.8759
Sikkim	0.8623
Telangana	0.8583
Tamil Nadu	0.8544
Tripura	0.9012
Uttar Pradesh	0.8681
Uttarakhand	0.7622
West Bengal	0.8520
Average	0.8398

Cost	chennai	coimbatore	madurai	tiruvallur	saalem	erode	karur	thoothukudi	teni		
chennai	0	187.74	385.33	108.12	1565.48	402.88	241.66	467.46	1270.07		
coimbatore	187.74	0	308.56	154.81	1689.27	590.61	106.25	279.83	1327.84		
madurai	385.33	308.56	0	430.74	1522.17	706.46	406.77	393.68	1072.96		
tiruvallur	108.12	154.81	430.74	0	1672.46	472.73	158.29	413.12	1372.39		
saalem	1565.48	1689.27	1522.17	1672.46	0	1345.56	1784.69	1902.25	680.33		
erode	402.88	590.61	706.46	472.73	1345.56	0	630.26	870.25	1236.26		
karur	241.66	106.25	406.77	158.29	1784.69	630.26	0	263.51	1433.79		
thoothukudi	467.46	279.83	393.68	413.12	1902.25	870.25	263.51	0	1464.89		
teni	1270.07	1327.84	1072.96	1372.39	680.33	1236.26	1433.79	1464.89	0		
Supply	To										
From	chennai	coimbatore	madurai	tiruvallur	saalem	erode	karur	thoothukudi	teni	total	Nodes out
chennai	3892	0	540	2526	0	0	148	0	0	7106	3
coimbatore	0	7901	0	0	0	0	139	282	0	8322	2
madurai	0	0	3251	0	0	0	0	0	0	3251	0
tiruvallur	0	0	0	3094	0	0	0	0	0	3094	0
saalem	0	0	0	0	2868	0	0	0	432	3300	1
erode	0	0	3048	0	0	1061	0	0	0	4109	1
karur	0	0	0	0	0	0	1412	0	0	1412	0
thoothukudi	0	0	0	0	0	0	0	1241	0	1241	0
teni	0	0	0	0	0	0	0	0	651	651	0
Supply	3892	7901	6839	5620	2868	1061	1699	1523	1083	32486	
Forecasted DD	3892	7901	6839	5620	1034	982	1699	1523	1083		
Cost	0	0	2361368.28	273111.12	0	0	50534.43	78912.06	293902.56	122.313138	
Nodes in	0	0	2	1	0	0	2	1	1		