Digitizing Medical Chart

Targeted Audience :Hospital Management

CEO:Jaime Ruiz
CTO:John Steel
Others : Hospital Management

By :
Chandu Eddala

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Problem :

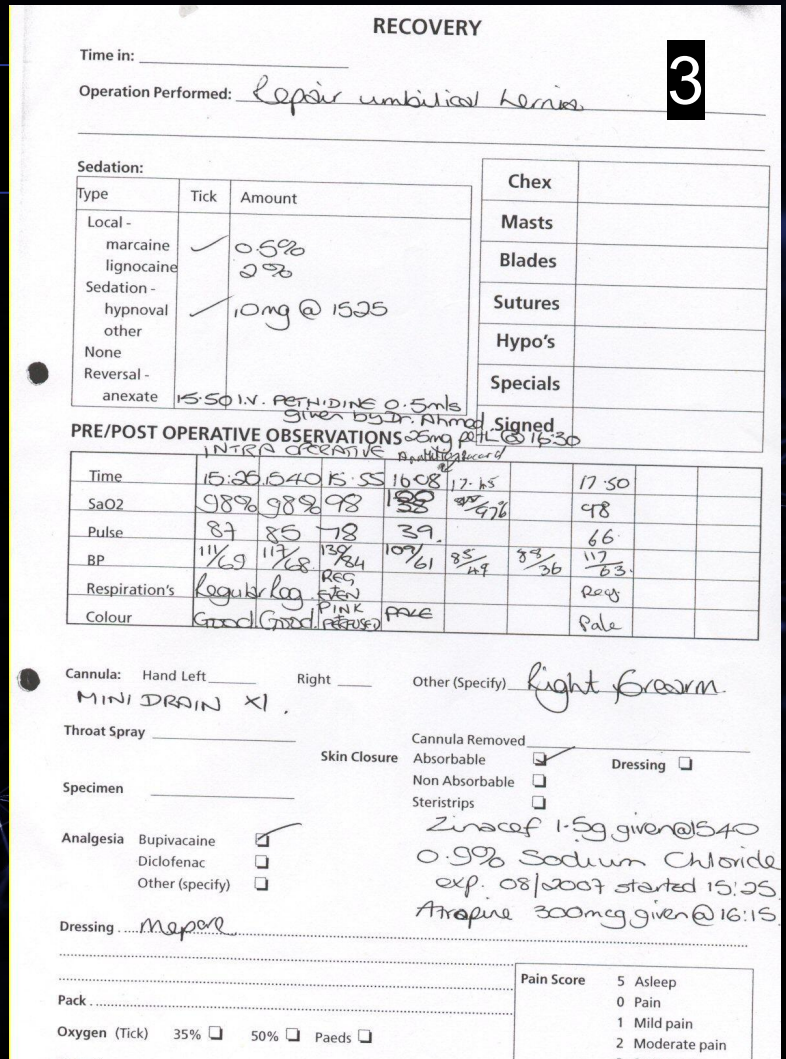
- Need to Digitalize the Patient Medical Charts .
- This charts are generated Daily basis.
- Need to use for the Future Research .

Solution-1

- Automated.
- Models used to Digitalized

Solution-2:

- Regular Process .
- Humans are used to Digitalized



RECOVERY

3

Time in: _____

Operation Performed: Repair umbilical hernia

Sedation:

Type	Tick	Amount
Local - marcaine	✓	0.5%
lignocaine		2%
Sedation - hypnoval	✓	10mg @ 1525
other		
None		
Reversal - anexate		

15:50 I.V. PETHIDINE 0.5mls given by Dr. Ahmad

Chex	
Masts	
Blades	
Sutures	
Hypo's	
Specials	
Signed	

PRE/POST OPERATIVE OBSERVATIONS 25mg PETHIDINE @ 16:30 INTRA OPERATIVE Anesthetic record

Time	15:25	15:40	15:55	16:08	17:45		17:50		
SaO2	98%	98%	98	100	97%		98		
Pulse	87	85	78	39.			66		
BP	111/69	117/68	138/84 REG STEN	109/61	85/49	83/36	117/63.		
Respiration's	Regular	Reg.					Regs		
Colour	Good	Good	PINK REFUSED	PALE			Pale		

Cannula: Hand Left ____ Right ____ Other (Specify) right forearm

MINI DRAIN XL.

Throat Spray _____

Skin Closure: Cannula Removed _____ Absorbable ✓ Dressing ☐ Non Absorbable ☐ Steristrips ☐

Specimen _____

Analgesia: Bupivacaine ✓ Diclofenac ☐ Other (specify) ☐

Zinacef 1.5g given@1540

0.9% Sodium Chloride exp. 08/2007 started 15:25

Atropine 300mcg given@16:15

Dressing Mepore

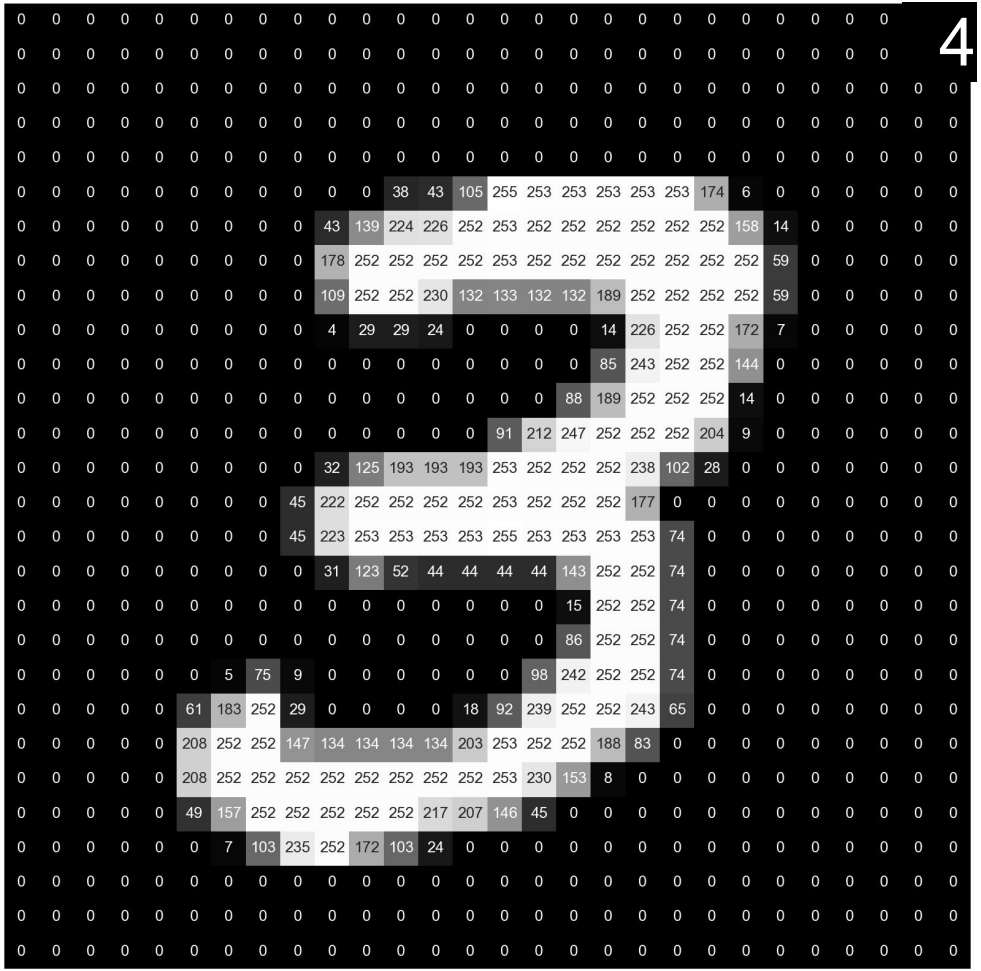
Pack _____

Oxygen (Tick) 35% ☐ 50% ☐ Paeds ☐

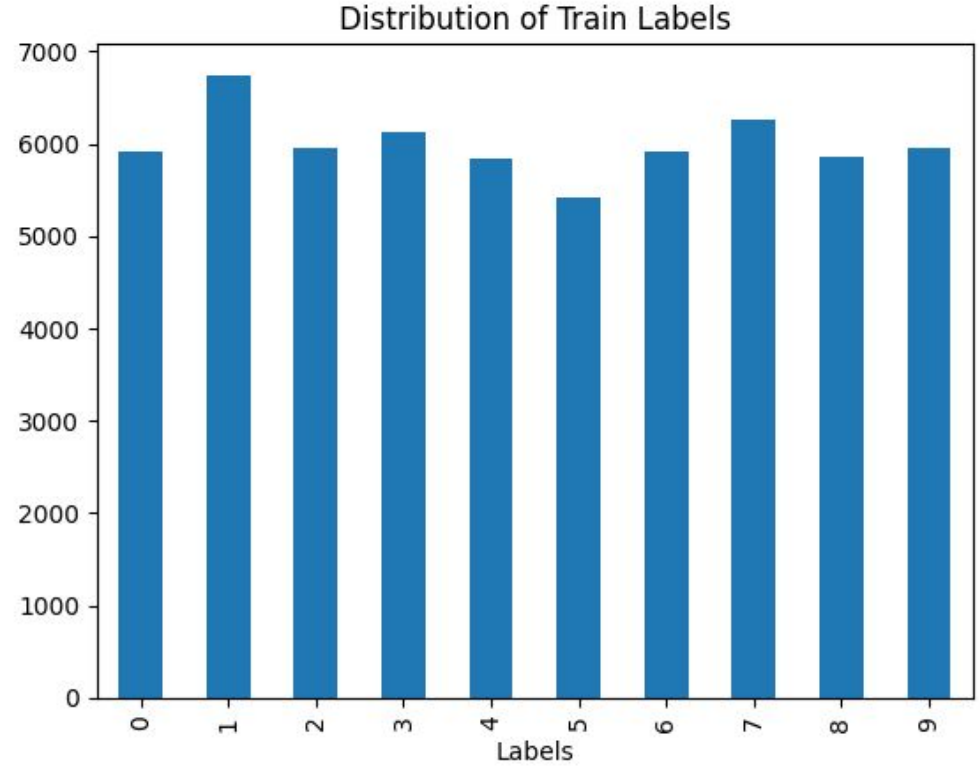
Pain Score	
5	Asleep
0	Pain
1	Mild pain
2	Moderate pain

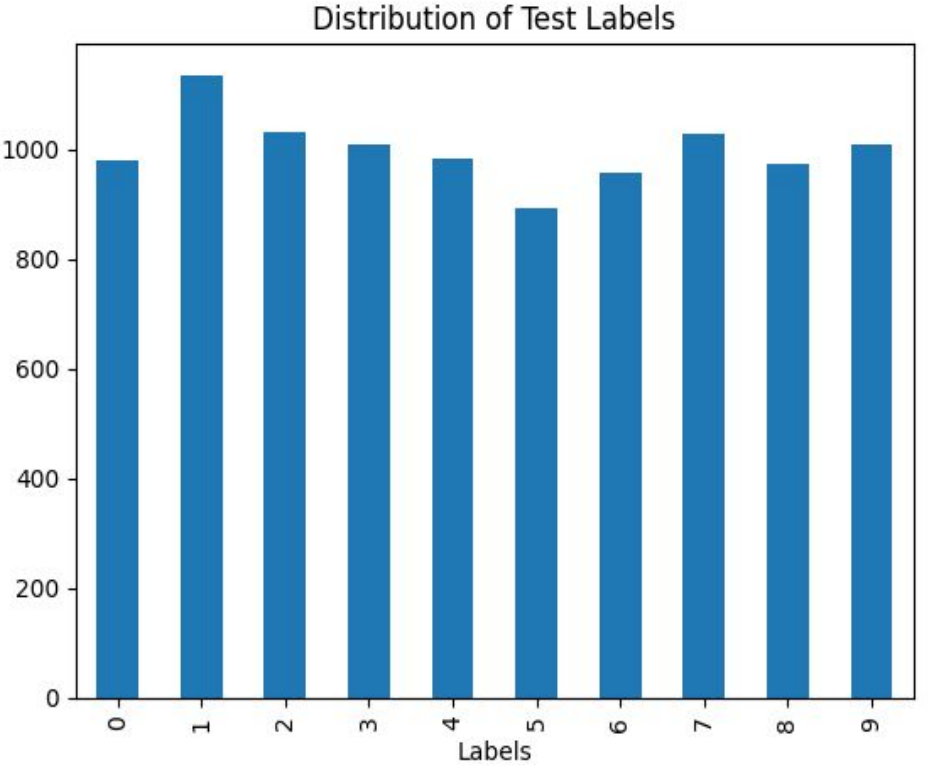
MNIST Dataset

- After Processing we have data Columns of 785
- The Image help use each ROW 28X28=784
- Label the Actual Number .



Data Distribution:





Models And Accuracy.

Navies Probabilities

All the Values Divided into 4 types .

Training:83%

Testing : 84%

Gaussian Naive

3 ways :

- Direct :

Train: 84% Test: 84%

- MinMax Scaling

Train: 40% Test: 40%

Non Gaussian Naive

3 ways :

- Direct :

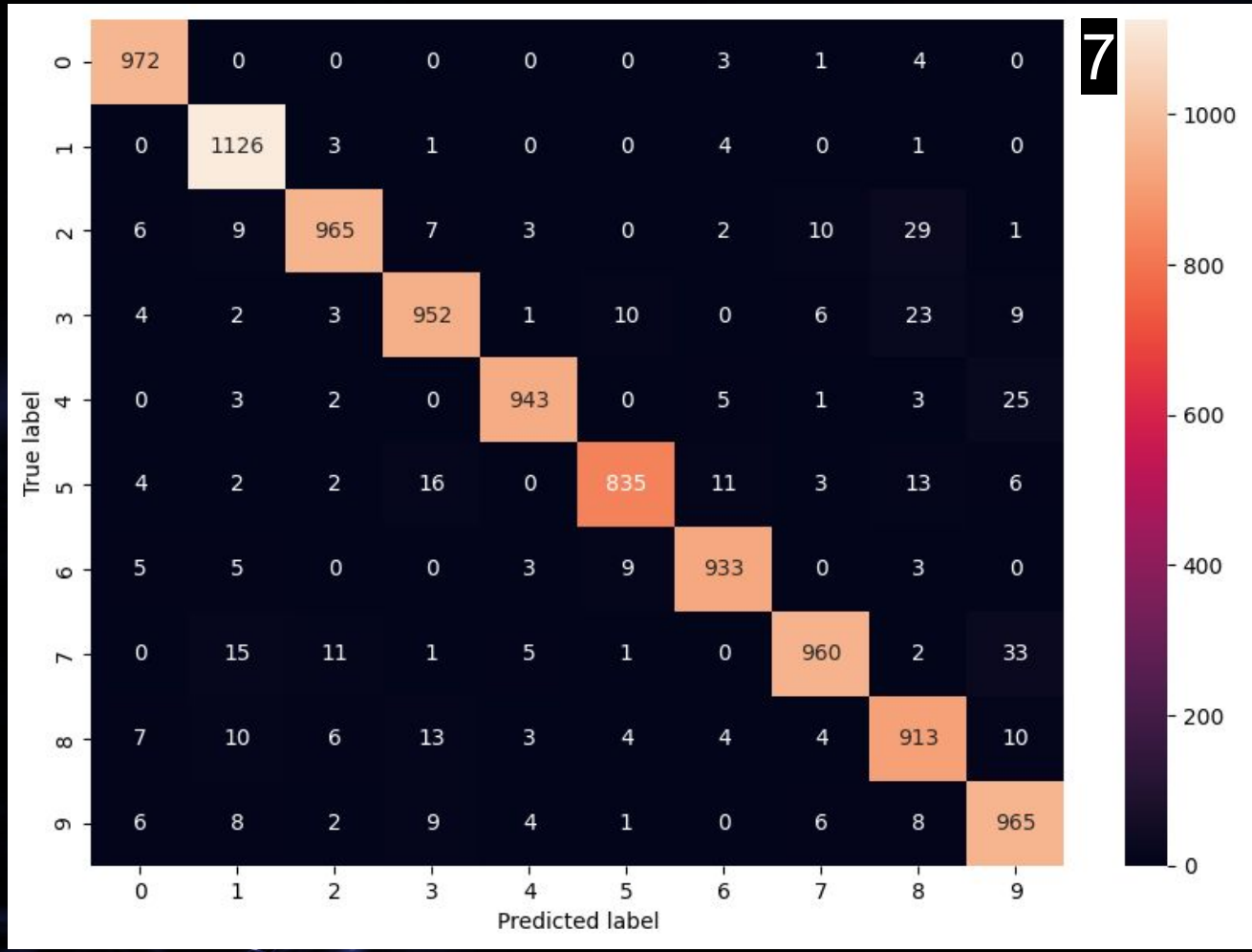
Train: 82% Test: 80%

- MinMax Scaling

Train: 95% Test: 95%

Note : Epsilon Adjusted.

Confusion Matrix:



Improvements

Neural Network

↓

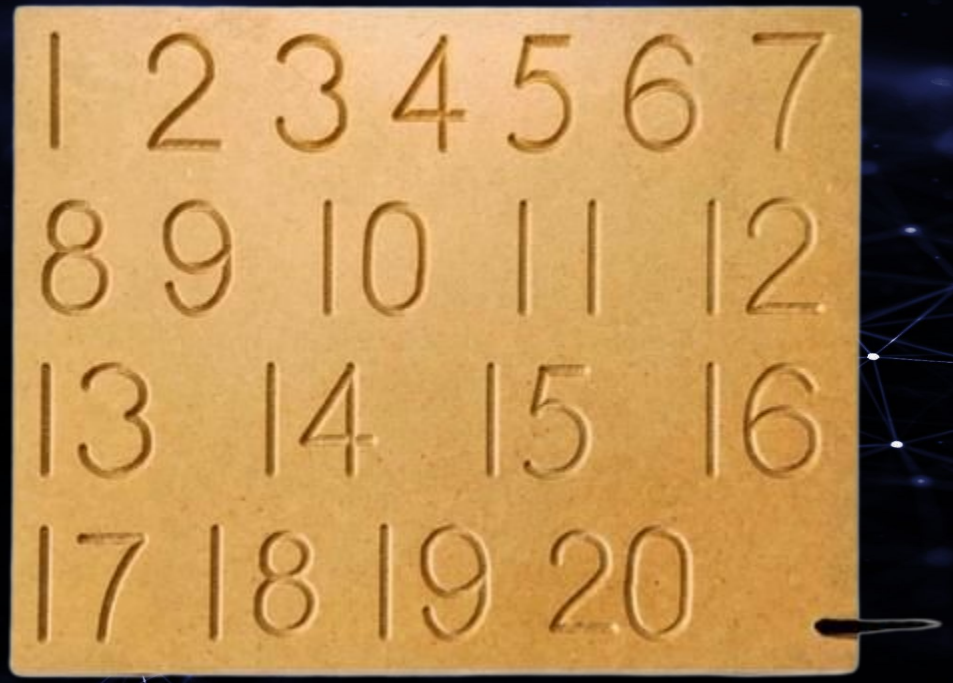
Ensemble Model

↓

Teaching right way of representing Numbers.

↓

Using Different types of Chart.

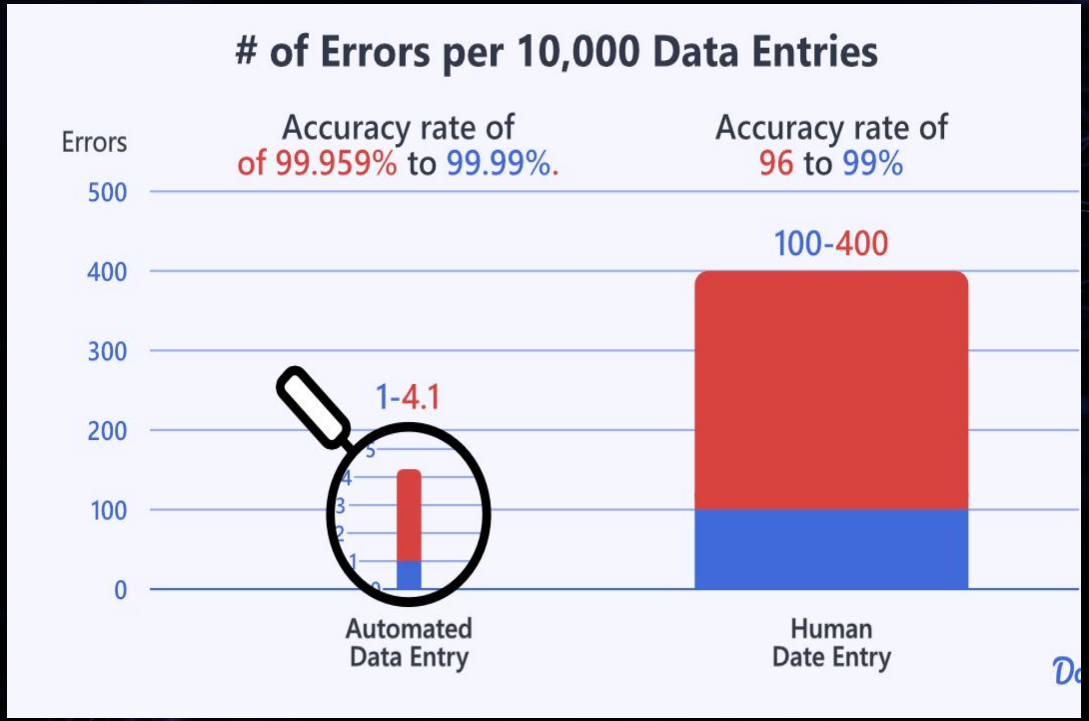


For Manual Process:

Need to Hire People

Train Them Properly

Resources needed



Compare : Manual VS Automatic(Model)

Manual

1. Continues Cost .
2. Can Start Immediately
3. Time Consuming Process .
4. Resisted to Process at any time .
5. Scalable Issues .
6. Employee’s with basic Skill can Handle.
7. Its Employee dependency

Automic(Model)

1. Initial Cost
2. Build the Models
3. Faster process
4. Available Anytime
5. Easily Scalable
6. Required Skilled Professionals .
7. Build once and use ,until any changes needed

Conclusion:

- Proceeding with Automation for Medical Chart Digitization.
- Faster ,Cost-effective,and scalable
- REduce manual effort ,available anytime

References:

- https://sample-templates123.com/4809/patient-chart-template/
- https://www.docuclipper.com/blog/data-entry-statistics/?utm_source
- https://aeldata.com/guide-to-document-digitization/


THANK
you