## MACHINE LEARNING MODEL COMPARISON BASED ON SOME METRICS

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## **Deep Learning Models**

Published: 24-03-2018 – Contributor: Choon Lin Tan – Size: 10000 – data.mendeley – 48 Features

DNN - 95.20 - 95.43 %

RNN – 92.60 – 93.93 %

CNN - 86.73 - 88.87 %

CNN + RNN - 90.21 - 90.31 % RNN + CNN - 95.46 - 95.13 %

Published: 2020-01-01 – Contributor: Sagar Banik – Size: 11000 – data.mendeley – 14

**Features** 

DNN - 91.08 - 89.45 % RNN - 98.70 - 99.12 % CNN - 99.68 - 100.0 %

CNN + RNN - 95.42 - 98.12 % RNN + CNN - 93.25 - 92.48 %

Published: 08-12-2018 – Contributor: Moruf Adebowale – Size: 13071 – data.mendeley - 35 Features

DNN - 97.63 - 94.11 % RNN - 93.81 - 93.19 % CNN - 91.22 - 92.76 %

CNN + RNN - 48.91 - 48.74 % RNN + CNN - 48.91 - 48.74 %

Published: 26-09-2020 – Contributor: Abdelhakim Hannousse/Salima Yahiouche – Size:

11430 – 87 Features

DNN - 72.59 - 75.21 % RNN - 76.90 - 77.34 %

CNN - 77.63 - 77.81 %

CNN + RNN - 79.10 - 79.15 % RNN + CNN - 77.37 - 77.40 %

Published: 2016 – Contributer: Canadian Institute for Cybersecurity – Size: 15367 – 79

## **Features**

DNN - 49.57 - 48.88 %

RNN – 49.57 – 48.88 %

CNN - 49.57 - 48.88 %

CNN + RNN - 49.08 - 50.03 %

RNN + CNN - 49.08 - 50.03 %

Published: 2015 – Contributer: Eswar Chand – Size: 11054 – kaggle.com – 31 Features

DNN - 44.20 - 45.04 %

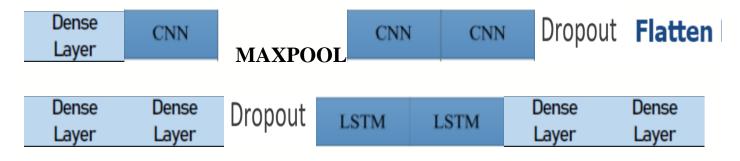
RNN - 88.77 - 92.43 %

CNN - 94.67 - 94.54 %

CNN + RNN - 94.43 - 94.30 %

RNN + CNN - 66.69 - 68.28 %

## **Model Architecture**



Dropout

LSTM	LSTM	Dense Layer	Dense Layer	Dropout	Dense Layer	Dense Layer
CNN	MAXPOOI	CNN	CNN	Dropout	Flatten	Dense Layer
Dense Layer	Dropout	Output				