

Table 1 Related Works

| Technique Used | Aspect concentrated | References |
|--|--|------------------------|
| Machine learning | Surveillance using genome | [5] |
| Automated deep learning | Patient detection and monitoring | [7] |
| Improved CBR model | Suspected cases classification | [1] |
| Machine learning based NLP using contact tracing | Awareness on WASH (Water, Sanitation, and Hygiene) | [24] |
| Multi-tree and Single-tree XGBoost Machine learning | Prediction of survival of severe cases | [33] |
| Feature selection using filter methods; Machine learning [Random forest, logistic regression, decision tree, SVM, ANN, etc.] | Mortality rate of infected patients | [25] |
| SIR model using Prophet (Tool for predicting time series data) | End of the pandemic | [22] |
| Modified Susceptible Exposed Infections Removed (SEIR) model and AI prediction | Peak and end of the pandemic | [34, 16, 35, 9, 13, 4] |
| Statistical model (using Bayesian inference) | Peak date of Mortality | [11] |
| CNN on chest X-ray images | Peak date of Mortality | [30] |
| Spatial epidemic model [Global Epidemic and Mobility Model] | Deaths and infection rate | [2] |

Table 2 Dataset Description

| Parameters | Description of the parameters |
|--------------------------------|--|
| Region | Name of the region (top affected regions across the world) |
| Date | Date when data was obtained |
| Confirmed cases | Cumulative Number of confirmed cases |
| Death | Cumulative Number of Death |
| After one week confirmed cases | After one week Cumulative Number of confirmed cases |
| After one week death | After one week Cumulative Number of Death |
| After two week confirmed cases | After two week Cumulative Number of confirmed cases |
| After two week death | After two week Cumulative Number of Death |

Table 3 Error Metrics

| Criteria | Achieved Results |
|-------------------------|--|
| Accuracy | 99.7% |
| R2 Score | 99.28% |
| Mean Absolute Error | 79818 |
| Root Mean Squared Error | confirmed two week: 287191.68 death two week: 29737.25 confirmed one week: 95643.30 death one week: 9559.26 |

Table 4 Prediction Results

| Region | Cumulative confirmed cases on 21 July | Cumulative death on 21 July | Cumulative confirmed cases on 28 July (prediction) | Cumulative death on 28 July (prediction) | Cumulative confirmed cases on 5 August (prediction) | Cumulative Death on 5 August (prediction) |
|---------------|---------------------------------------|-----------------------------|--|--|---|---|
| India | 1155191 | 28084 | 1359221 | 34962 | 1903457 | 50048 |
| Spain | 264836 | 28422 | 279847 | 30411 | 300939 | 33596 |
| USA | 3830010 | 140906 | 4428455 | 151229 | 5905644 | 179077 |
| UK | 294066 | 45273 | 322611 | 48867 | 365408 | 53181 |
| Italy | 244624 | 35058 | 245815 | 35389 | 246179 | 35611 |
| World | 14684741 | 610110 | 15897928 | 618893 | 18744939 | 654440 |
| Maharashtra | 325045 | 12170 | 382336 | 14673 | 512465 | 20859 |
| Tamil Nadu | 180643 | 2626 | 217822 | 3232 | 291515 | 4442 |
| Gujarat | 49353 | 2162 | 55559 | 2121 | 72911 | 2197 |
| Uttar Pradesh | 51160 | 1192 | 62287 | 1490 | 95773 | 2475 |
| Delhi | 123747 | 3663 | 141010 | 4225 | 174828 | 5290 |
| Chennai | 88337 | 1475 | 99413 | 1690 | 111925 | 1949 |