**SDM College of Engineering & Technology,Dharwad - 580 002**

Department of Information Science and Engineering,

**Project Synopsis**

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| Project Group Id: 8 | | | | | | |
| Project Synopsis (Describe your product or solution in 100 Words): | Pneumonia is a serious lung infection that affects people of all ages but is particularly dangerous for older adults and young children. The World Health Organization estimates that more than 160 million children around the world develop pneumonia each year, 20 million of whom are hospitalized and 2 million of whom die.  Therefore, we are coming up with a tool for doctors that is able to classify medical images (x-ray scans for lungs). This is a personalized medical diagnosis that uses deep learning and machine learning to help doctors and patients. The diseases that we will be detecting are Bacterial Pneumonia and Viral Pneumonia. | | | | | |
| Team Members with photo: | | | | | | |
| Photo 1  C:\Users\Dell\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\IMG-20190813-WA0015.jpg | | Photo 2  C:\Users\Dell\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\IMG-20190813-WA0013.jpg | | Photo 3  C:\Users\Dell\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\New Doc 2018-10-05 23.06.18_1.jpg | Photo 4  C:\Users\Dell\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\IMG-20190813-WA0014.jpg | |
| Member Name | | Member Name | | Member Name | Member Name | |
| Nagendra T. | | Chinmay Dixit | | R. R. Prashant | Amrut M. | |
| Team skills matrix: | | | | | | |
| Member Name | Skills | | Roles | | | Signature |
| Nagendra T. | Machin Learning / Deep Learning | | Build convolutional neural network | | |  |
| Chinmay Dixit | Machin Learning / Deep Learning | | Build convolutional neural network | | |  |
| R. R. Prashant | Web API deployment | | Build web on Flask | | |  |
| Amrut M. | Data Labeling for supervised learning | | Label the medical image data | | |  |
| Why this product / solution required: | | In developed countries, access to antibiotics and vaccines has mostly controlled incidents of childhood pneumonia. However, in developing countries, pneumonia takes the lives of more children than any other single cause each year, including any other single disease, war, or famine.  There are so many medical facilities in the US and EU. Therefore, we target India by finding out the resolutions here. We laser focus on one kind of medical image, i.e., the lung images to detect Pneumonia. | | | | |
| Describe your product or solution in (100 Words): | | We intent to automate healthcare via a classifier. This is a personalized medical diagnosis that uses deep learning and machine learning to help doctors and patients.The input is a medical image(x-ray scans for lungs). It goes through the disease classifier MODEL (pattern recognition by supervised learning). The output of our tool tells whether the person is normal or is affected with Bacterial Pneumonia or Viral Pneumonia. | | | | |
| How is your solution better than those currently existing in market (100 words): | | Doctors and Radiologists spend years studying how to classify the images and we try to automate that. There is a shortage of Doctors and Radiologists out there in the rural areas. They are also expensive.  And a lot of times, there is a lot of miss diagnosis, which is bad for the patients in terms of their health and is also dangerous for doctors in terms of liabilities.  Thus, we are coming up with this Novel solution that is able to solve the above problems. | | | | |
| What are the benefits of your product / solution to the society | | Our product helps all the people involved in the healthcare cycle – the Doctors, the Radiologists and the Patient. | | | | |
| Total cost of the product/ technology: | | 30,000 to 40,000 Rupees | | | | |
| Duration of the work (Months) | | 4-5 months | | | | |
| Final impact: | | Personalized and AutomatedMedical Diagnosis via a classifier. | | | | |
| Reference: | | Data: <https://data.mendeley.com/datasets/rscbjbr9sj/2>  License: [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)  Citation: <http://www.cell.com/cell/fulltext/S0092-8674(18)30154-5> | | | | |