



Final Year Project Showcase for Batch-2016

Department of Computer Information Systems Engineering		
1	<b>Project Idea</b>	Crop Identification and Monitoring using Machine Learning
2	<b>Process</b>	The process includes using the data obtained from satellites
3	<b>Outcome</b>	A pipelined process highlighting different crops, bare lands, water lines to clearly visualize that area and its plantation.
4	<b>Evidences (Theoretical Basis)</b>	The theoretical evidence based on different researches done on how to use satellite data for a better understanding of land areas of different types. These satellite images have been evolving ever since and there have been many advancements in the field of agriculture and crop monitoring through the information of band of different wavelengths and their importance for land coverage.
5	<b>Competitive Advantage or Unique Selling Proposition</b> (Cost Reduction, Process improvement, Attainment of any SDG (Sustainable Development Goal), increase of market share or capturing new market or having superior performance over competitor. In summary, any striking aspect of the project which compels industry to invest in FYP or purchase it. Some detail description is required in terms of how, why when what. You can select one or more from following dropdown and delete rest of them)	
a	<b>Cost reduction of existing Product</b>	The existing product is not yet functional until now, land surveys have been done for monitoring and identification purposes of crops in Pakistan, due to which the satellite data regarding the monitoring purposes is not available for this region. So, by using satellite data and machine learning algorithms, we can reduce the cost of land surveys, which can help boost the economy.
b	<b>Process Improvement which leads to superior product or cost reduction, efficiency improvement of whole process</b> (e.g. What is issue is current process and what improvement you suggests)	Further improvement can be done, by using satellite data, having more details about band information, which then helps in the formation of more precise images of the target region. Moreover, we can also use specialized GPUs with better processing power, which can process more data and train a more complex algorithm to improve the performance of the model.
c	<b>Attainment of any SDG</b> (e.g. How it is achieved and why it is necessary for the region)	The idea introduced using this project is to use satellite data for better monitoring of crop growth. It is necessary because the world is heading towards a new era where nations who are using advanced technology for boosting their economy will have better development goals than those traditional processes. This project can be used as part of the development plan for a new era of technological advancement for Pakistan.
d	<b>Expanding of Market share</b> (e.g. how it expand and what is	The problem with the current process is that it is time-consuming along with its high cost, which makes it difficult



	problem with current market	to do over a large area. By using satellite data and machine learning pipeline, we can reduce the cost for land surveys, and also by reducing the time for the surveys, we can take relevant actions to increase the growth.
e	<b>Capture new market</b> (e.g. Niche market or unaddressed segment)	It will mainly target the agricultural market of the country and address the issue of ineffective monitoring and reduce the cost of land surveys.
f	<b>Any Environmental Aspect</b> (e.g. carbon reduction, energy efficient etc.)	It will have an indirect effect on the environment. The fact that this project aims to reduce land surveys, results in the reduction of transport and vehicle surveys which results in less carbon emission through those mobiles.
6	<b>Team Members</b> (Names & Roll No.)	Hafsa Bhatti CS-16089 Tayyaba Shafiq CS-16077 Mariam Irfan CS-16100
7	<b>Supervisor Name</b>	Dr. Muhammad Khurram ( <a href="mailto:mkhurram@neduet.edu.pk">mkhurram@neduet.edu.pk</a> )
8	<b>Pictures</b>	Attached below
9	<b>Video</b>	<a href="https://drive.google.com/file/d/1B-gX2iA6sVSRMy4s0SFBCkpaV3pp1HzL/view?usp=sharing">https://drive.google.com/file/d/1B-gX2iA6sVSRMy4s0SFBCkpaV3pp1HzL/view?usp=sharing</a>

**Pictures:**



