

Department of Computer Science and Engineering  
Bangladesh University of Business and Technology (BUBT)



**CSE 498: Literature Review Records**

<b>Student's Id and Name</b>	<b>Name:</b> Bm.Shadman Sakib Mahee and <b>ID:</b> 19201103123
<b>Capstone Project Title</b>	Mango Fruit Disease Detection
<b>Supervisor Name &amp; Designation</b>	<b>Name:</b> M. M. Fazle Rabbi & <b>Designation:</b> Assistant Professor, Department of CSE, BUBT
<b>Course Teacher's Name &amp; Designation</b>	<b>Name:</b> Khan Md. Hasib & <b>Designation:</b> Assistant Professor, Department of CSE, BUBT

Aspects	Paper # 6 (Title)																										
<b>Title / Question</b> (What is problem statement?)	Building a plant disease detection algorithm based on deep learning																										
<b>Objectives / Goal</b> (What is looking for?)	I may use this report to identify research obstacles and gaps, which will aid in my subsequent study in this area. The dataset, the preparation processes, and the model are described in the study. identification of crop diseases using architecture. As a guide for creating my own crop disease identification models, I can use this information.																										
<b>Methodology / Theory</b> (How to find the solution?)	The project was categorized into three stages. <ul style="list-style-type: none"><li>• Data Acquiring and Preprocessing,</li><li>• Convolutional Neural Network Architecture, and Analysis</li><li>• Model Evaluation and Validation</li></ul>																										
<b>Software Tools</b> (What program/software is used for design, coding and simulation?)	Python, TensorFlow, Keras, OpenCV, NumPy, Jupyter Notebook																										
<b>Test / Experiment</b> How to test and characterize the design/prototype?	To classify crop diseases, we can resize the images to 224 pixels, split the data into an 80% training set and 20% test set, and perform data augmentation. We train five pre-trained CNN models to classify crops and detect diseases, validate and tune hyperparameters, and use the Softmax activation function to determine optimal models with high validation accuracy. Finally, we test the models with data not used for training.																										
<b>Simulation/Test Data</b> (What parameters are determined?)	In This Paper there is almost 1662 Images																										
<b>Result / Conclusion</b> (What was the final result?)	<table><tr><th colspan="2" rowspan="2">Step</th><th rowspan="2">Crop</th><th rowspan="2">Pre-trained model</th><th colspan="2">Accuracy</th></tr><tr><th>Validation</th><th>Test</th></tr><tr><td rowspan="5">1</td><td rowspan="5">Crop classification</td><td rowspan="5">All</td><td>ResNet50</td><td>92.34%</td><td>91.84%</td></tr><tr><td>AlexNet</td><td>97.62%</td><td>96.87%</td></tr><tr><td>GoogleNet</td><td>98.16%</td><td>99.08%</td></tr><tr><td>VGG19</td><td>96.86%</td><td>98.71%</td></tr><tr><td>EfficientNet</td><td>98.54%</td><td>99.33%</td></tr></table>	Step		Crop	Pre-trained model	Accuracy		Validation	Test	1	Crop classification	All	ResNet50	92.34%	91.84%	AlexNet	97.62%	96.87%	GoogleNet	98.16%	99.08%	VGG19	96.86%	98.71%	EfficientNet	98.54%	99.33%
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<b>Obstacles/Challenges</b> (List the methodological obstacles if authors mentioned in the article)	There was no Obstacles Found																										
<b>Terminology</b> (List the common basic words frequently used in this research field)	CNN; ResNet50,VGG19,dataset,Ai,Deep Learning, machine learning																										

<p><b>Review Judgment</b> (Briefly compare the objectives and results of all the articles you reviewed)</p>	<ul style="list-style-type: none"> <li>• "Deep learning-based crop disease recognition using convolutional neural networks" had accuracy of 99.35% in distinguishing between healthy and diseased leaves.</li> <li>• "Identification of plant diseases using machine learning techniques: A review" had 91% of accuracy</li> </ul>
<p><b>Review Outcome</b> (Make a decision how to use/refer the obtained knowledge to prepare a separate and new methodology for your own research project)</p>	<p>This paper can help me for further research in this area, this paper can identify research gaps and challenges. The paper describes the dataset, preprocessing steps, and model architecture used for crop disease identification. This information can be used for me as a guide for developing my own crop disease identification models.</p>