Skin Disease Detection using Machine Learning

Appendix A

How Ks are addressed through the project and mapping among Ks, COs, and POs

Ks	Attributes	How Ks are addressed through the project	COs	POs
K4	Specialist knowledge	Convolutional Neural Network (CNN), Support Vector Machine (SVM), ResNet50, Inception V3.	CO1, CO2	PO-(a) , PO-(b), PO-(l).
K5	Engineering Design	Decision-Tree(DT), Random Forest, Chi-square automatic interaction detection (CHAID), Exclusive feature combination bundling (EFB)	CO3, CO4	PO-(c), PO-(g).
K6	Engineering Practice	VS code, Python libraries for Machine Learning: Light Gradient Boosting Machine (LGBM)	CO1, CO2,	PO-(l), PO-(b).
K8	Research Literature	Deep convolutional neural network (DCNN), Incremental convolutional neural network(ICNN),transfer learning model: ResNet50, Inception V3,AlexNet, Segmentation algorithm.	CO1	PO-(l)

How Ps are addressed through the project and mapping among Ps, COs, and POs

Ps	Attribute	How Ps are addressed through the project	COs	POs
P1	Depth of knowledge required	The work requires study of research on Convolutional Neural Network (K4) specially different transfer learning model like ResNet50, AlexNet (K8), machine learning model design using Decision-Tree: Random Forest, Chi-square automatic interaction detection (CHAID), Exclusive feature combination bundling (EFB) (K5) and Python libraries for Machine Learning: Light Gradient Boosting Machine (LGBM) (K6).	CO1, CO2, CO7	PO(I), PO(b), PO(c), PO(d)
P3	Depth of analysis required	The work needs to study more CNN models (DT, SVM, KNN, LGBM) to provide a suitable solution. To improve the performance, analyzing the current systems, as well as the selection of the tools, are needed.	CO2, CO7,	PO(b), PO(c), PO(d), PO(e)
P5	Extent of applicable Codes	Densenet, VGG, AlexNet and other industrial standard library functions build a sustainable and eco-friendly solution that will fulfill the requirements of the proposed system.	CO4, CO5,	PO(g), PO(f),
P7	Interdependence	Interdependency subsystems like ● Data Collection & Processing ● Choosing a CNN Models ● Training and tuning models ● Evaluating model. ● Generate images.	CO3, CO7,	PO(K), PO(c), PO(d), PO(e),

How As are addressed through the project

As	Attribute	How As are addressed through the project	COs	POs
A1	Ranges of resources	This thesis needs to engage diverse resources including Skin Disease Specialist, medical Images, and other information and technologies.	CO8	PO(j)
A3	Innovation	We are proposing a model that will detect the number of skin diseases by augmenting the existing data. To make this model highly accurate, a deep machine learning model is needed.	CO8	PO(j)
A4	Consequences for society and environment	Our work helps the people to obtain an immediate result of skin disease type thus helps them to take proper medication in time.	CO8	PO(j)
A5	Familiarity	The work deals with many skin types of diseases analyzing specific amounts of dataset.	CO8	PO(j)