

Virtually Possible: Enhancing Quality Control of 3D-Printed Medicines with Machine Vision Trained on Photorealistic Images

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Table S1. MLTs and their parameters for grid search.

MLT	Parameters
Decision Tree	Splitter = ['best', 'random']
	max_depth = [None, 4,5,6,7,8]
	criterion = ['gini', 'entropy', 'log_loss']
	min_samples_leaf = [1,2,3,4,5]
	max_features = ['auto', 'sqrt', 'log2']
Random Forest	n_estimators = [2,3,4,5,6,7,8,9,10]
	max_features = ['auto', 'sqrt', 'log2']
	max_depth = [4,5,6,7,8]
	criterion = ['gini', 'entropy']
Gradient Boost	max_features = ['auto', 'sqrt', 'log2']
	loss = ['log_loss', 'deviance', 'exponential']
	learning_rate_init = [0.1]
	n_estimators = [2,3,4,5,6,7,8,9,10]
	max_depth = [4,5,6,7,8]
Logistic Regression	C = [1,2,3,4,5,6,7,8,9,10]
	penalty = [None, 'l1', 'l2', 'elasticnet']
	solver = ['lbfgs', 'liblinear', 'newton-cg', 'newton-cholesky', 'sag', 'saga']
Multi-layer perceptron	neurons = [1,10,25,50,100]
	activation = ['identity', 'logistic', 'tanh', 'relu']
	learning_rate_init = [0.1, 0.001, 0.00001]
k-nearest neighbour	n_neighbors = [1,2,3,4,5,6,7,8,9,10, 12, 15]
	weights = ['uniform', 'distance']
	algorithm = ['auto', 'ball_tree', 'kd_tree', 'brute']
Support Vector Machines	C = [1,2,3,4,5,6,7,8,9,10]
	kernel = ['rbf', 'linear', 'poly', 'sigmoid']
	shrinking = [True, False]

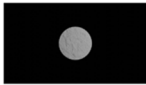
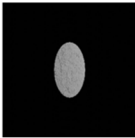


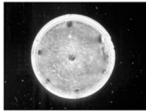
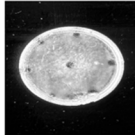


	Original	256x256	125x125	25x25
Virtual				
Real				

Figure S1. Representative images of tablets following re-sizing.





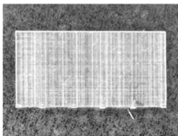
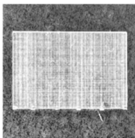


	Original	256x256	125x125	25x25
Virtual				
Real				

Figure S2. Representative images of films following re-sizing.

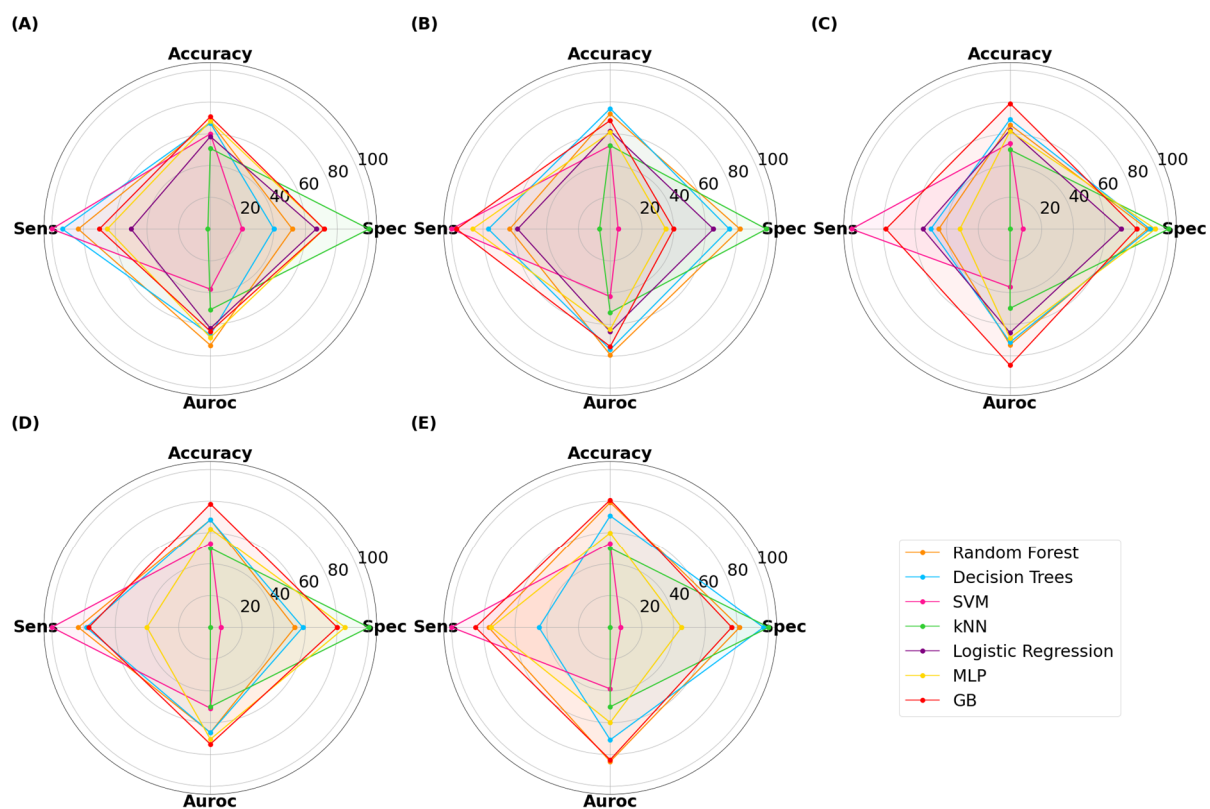


Figure S3. MLTs performance for classifying SLA-printed capsules after grayscale transformation, with image sizes of (A) 25 pixels, (B), 50 pixels, (C) 125 pixels, (D) 256 pixels and (E) 512 pixels.

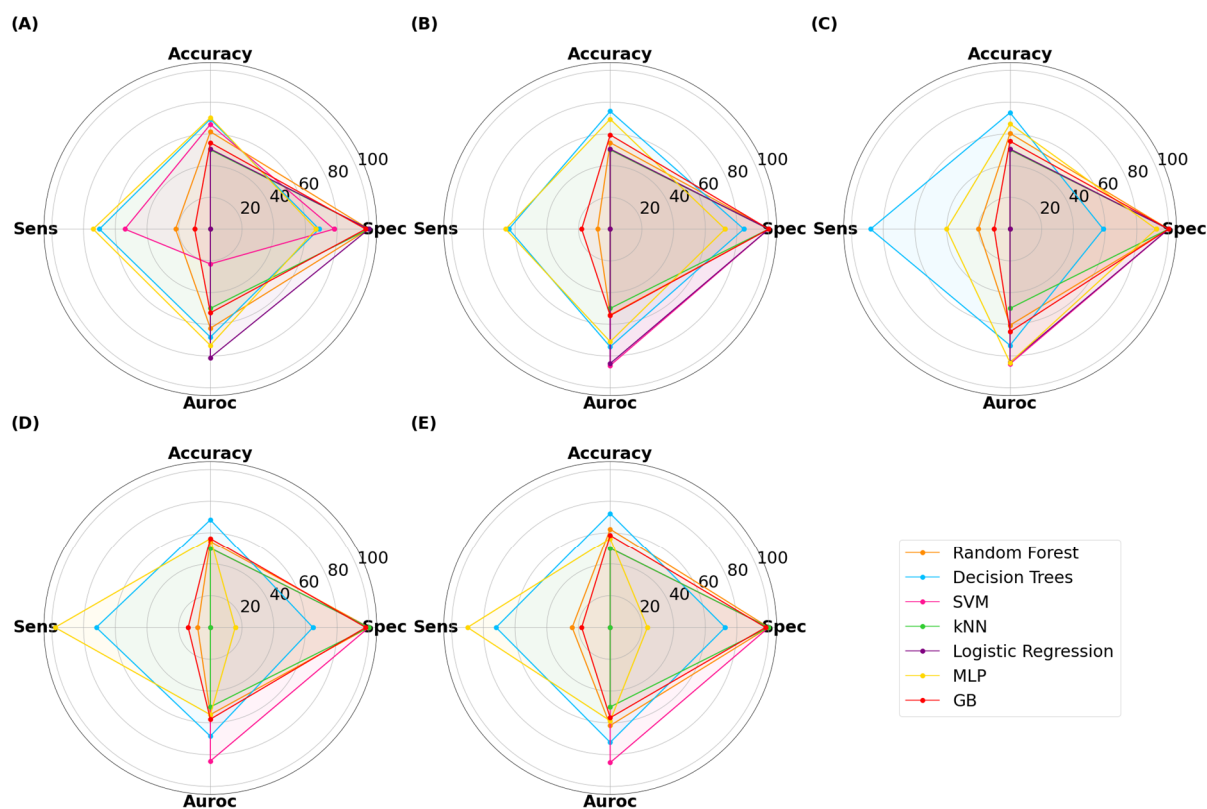


Figure S4. MLTs performance for classifying SLA-printed tablets after grayscale transformation, with image sizes of (A) 25 pixels, (B), 50 pixels, (C) 125 pixels, (D) 256 pixels and (E) 512 pixels.

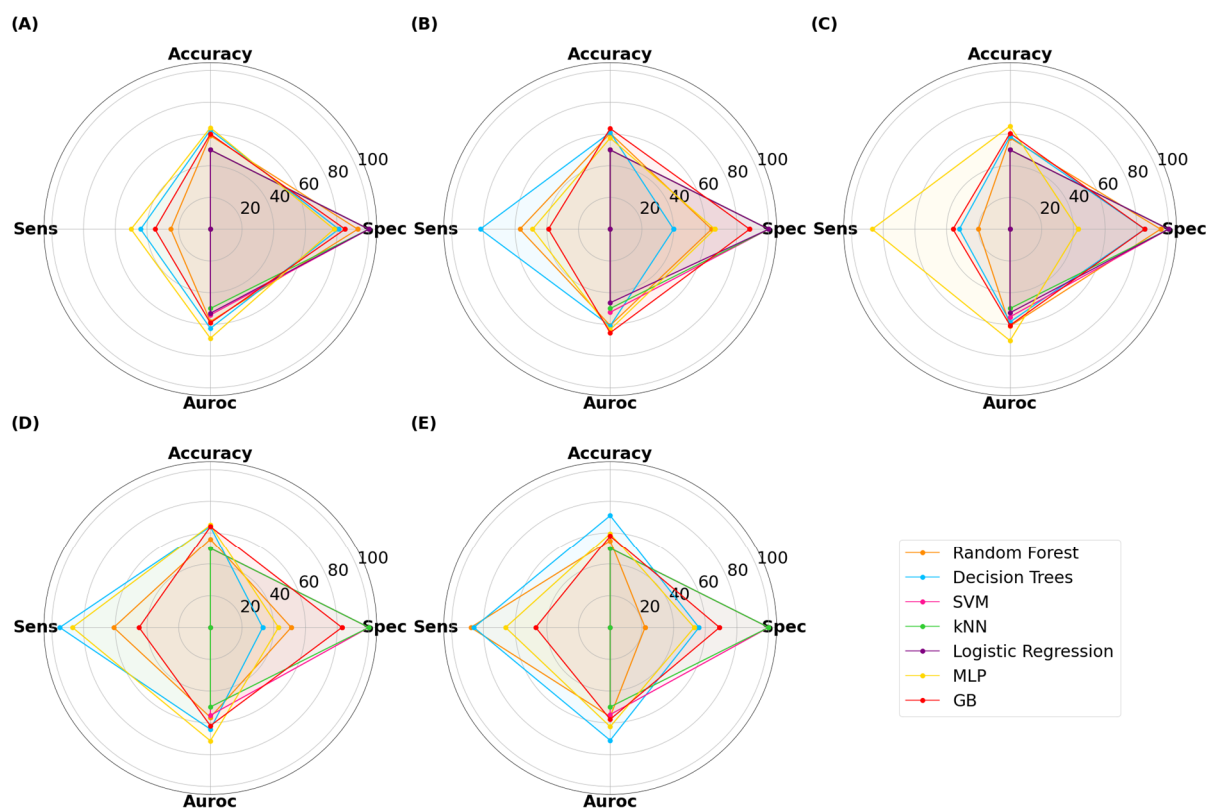


Figure S5. MLTs performance for classifying SLA-printed films after grayscale transformation, with image sizes of (A) 25 pixels, (B), 50 pixels, (C) 125 pixels, (D) 256 pixels and (E) 512 pixels.