Estimating the Photometric Redshifts of Galaxies Using Regression Techniques

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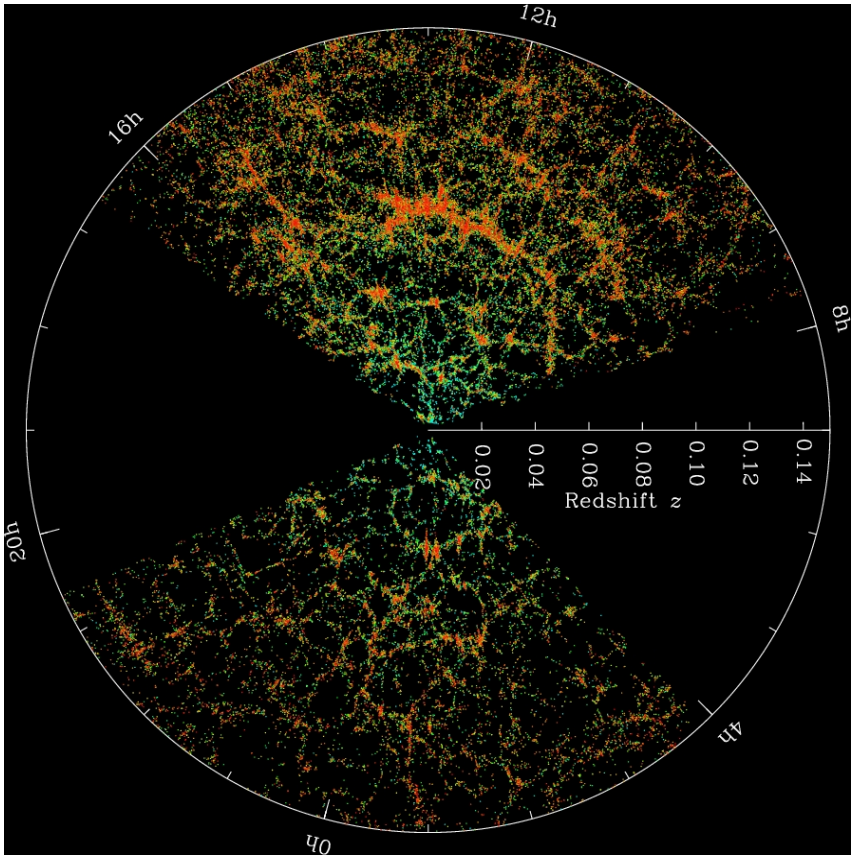
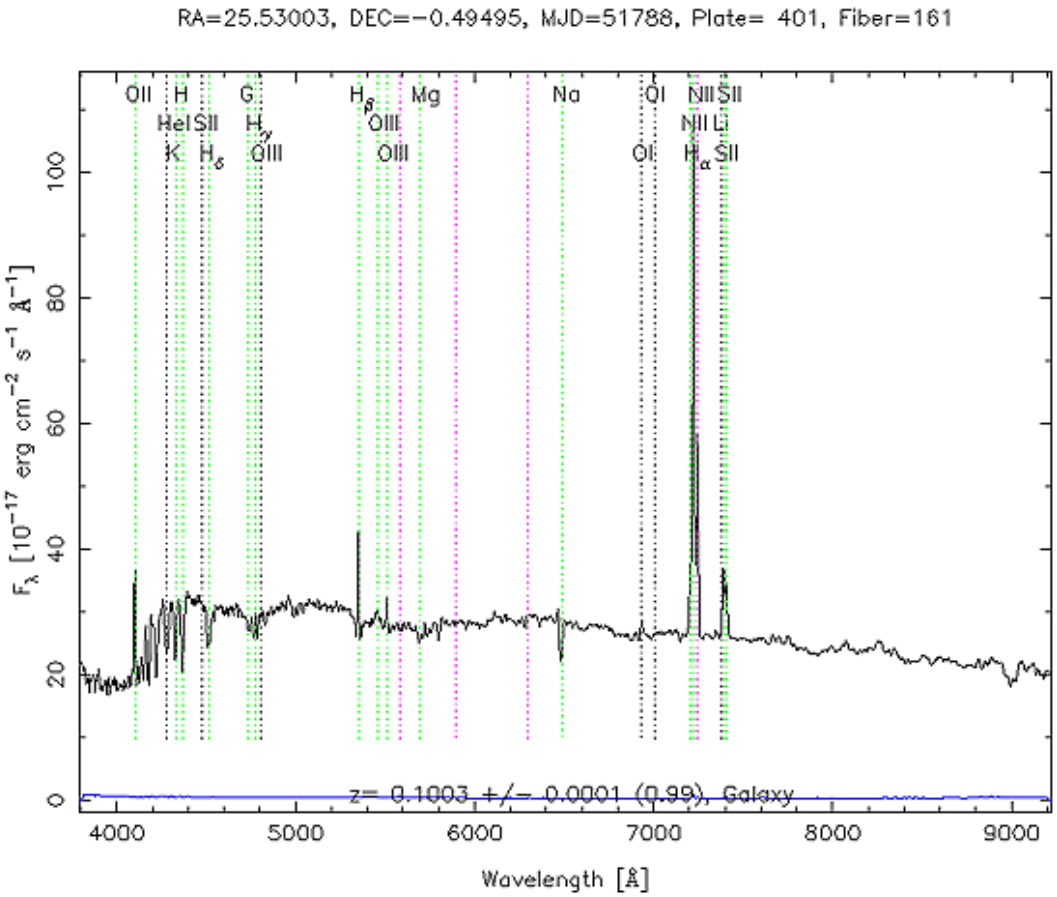
Overview

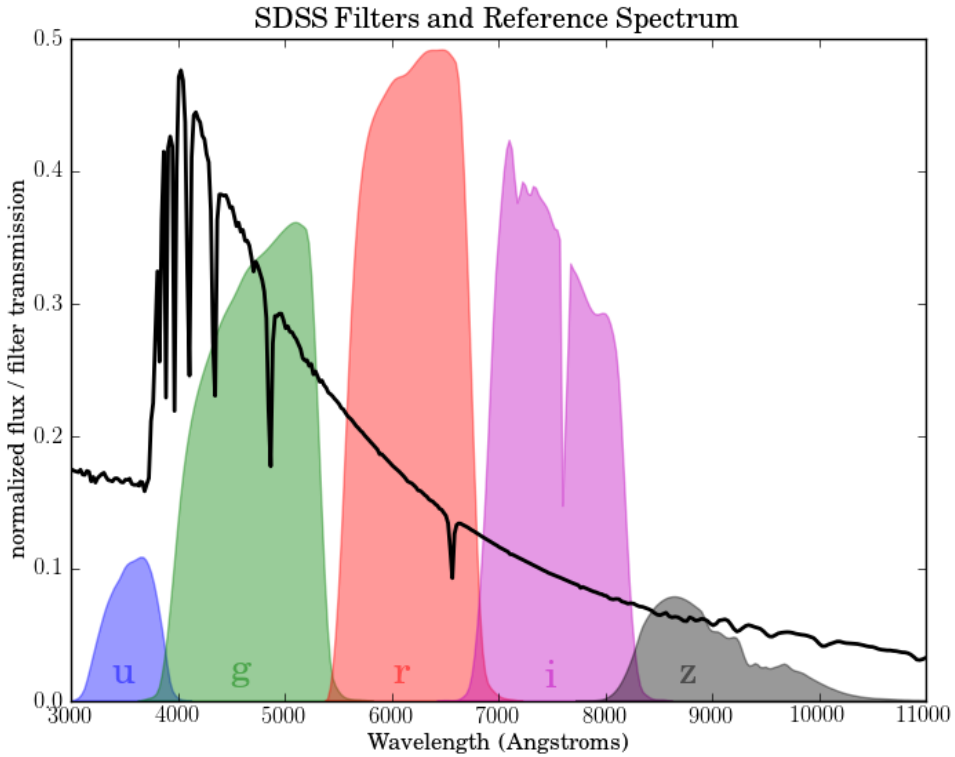


SDSS Galaxy Map

- Possibility of Obtaining a Spectrum
- Sophisticated ML Algorithm
- Dark Energy and Dark Matter



$$\lambda_{obs} = (1 + z)\lambda_{em} \tag{1}$$



$$u = m_{\text{ref}} - 2.5 \log 10 \left[\int_0^{\infty} F(\lambda) S(\lambda) d\lambda \right] \tag{2}$$

Decision Tree

Decision trees map a set of input features to their corresponding output targets. This is done through a series of individual decisions where each decision represents a node (or branching) of the tree.

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Random Forest

Random forests are an ensemble learning method for classification, regression and other tasks that operates by constructing a multitude of decision trees at training time.

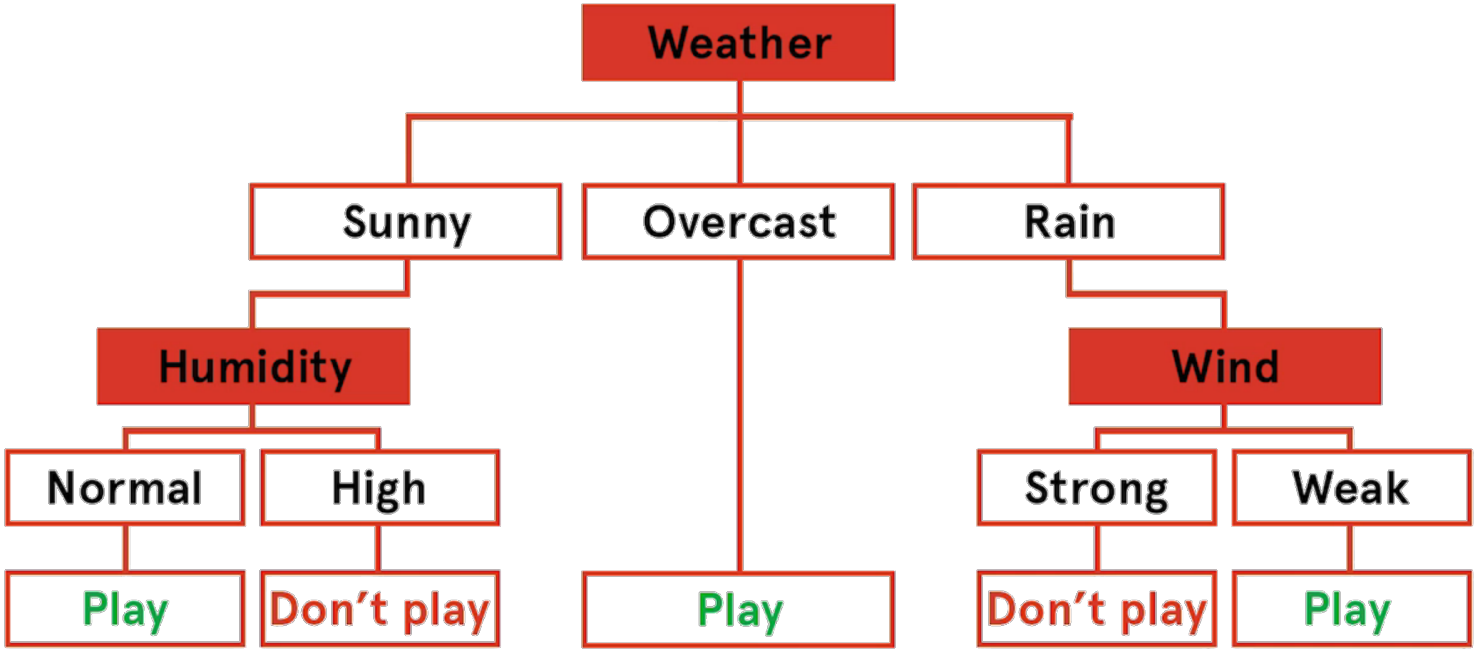

Figure 1: Schematic View of Decision Tree

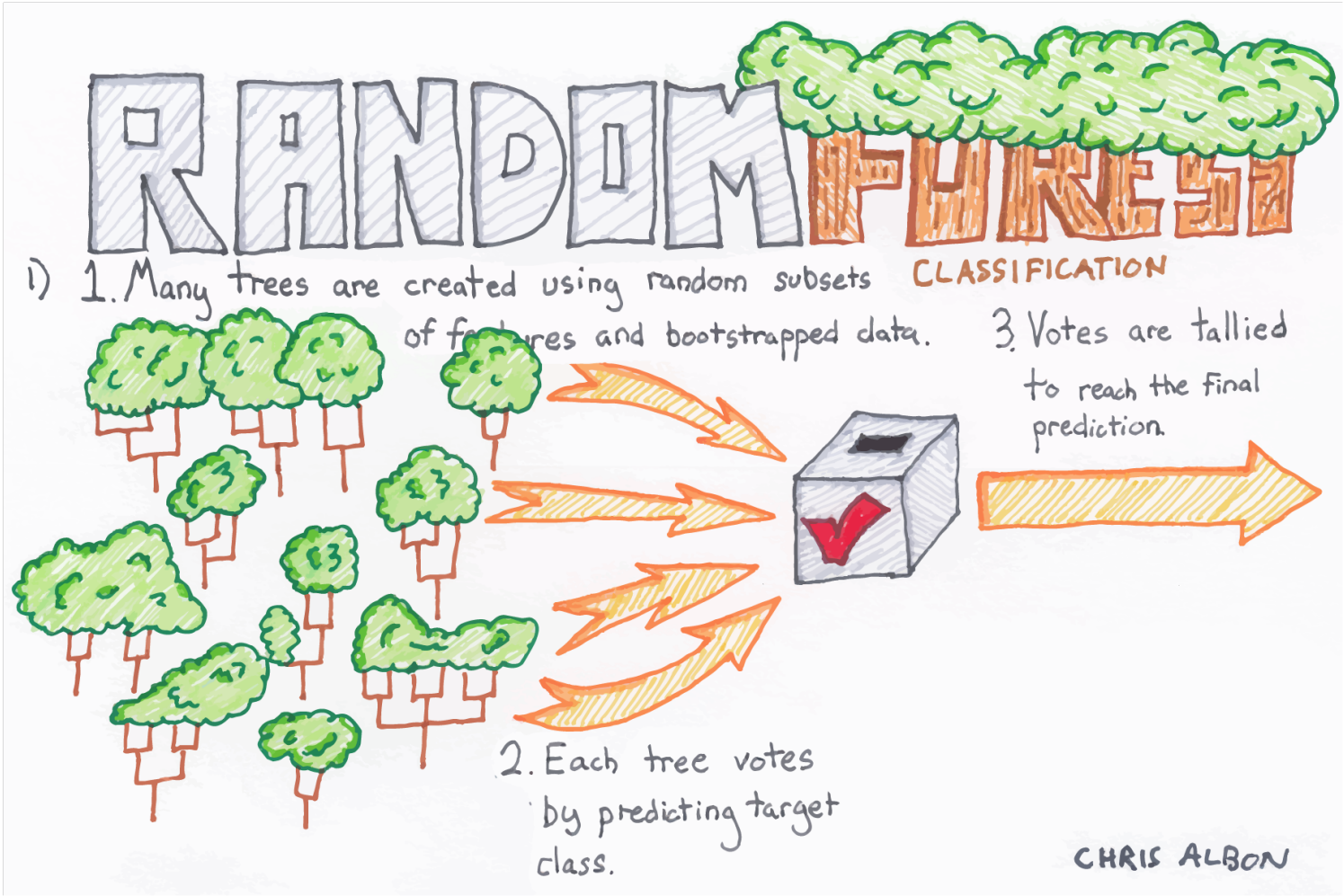

Figure 2: Schematic View of Random Forest

Thanks For Your Attention :)