

https://github.com/Ryndom/wood_id

Professionals and Hobbyist often struggle with wood identification. Current tools involve speculation and/or micro inspection.

Goal:

Create user friendly IOS app that would allow user to take a photo and narrow-down identification of the wood type/species.

Machine Learning Method

Convolutional Neural Networks

Available resources (at this point):

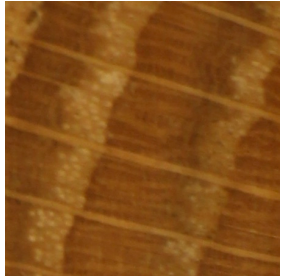


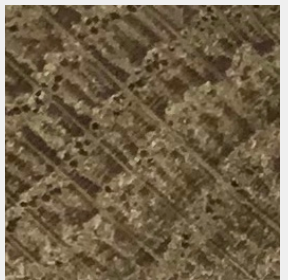

- 50 relatively hi-res end grain photos. They were hi-res about 8 years ago, now they are comparable to results I am getting from a iPhone camera.
- 200 side grain photos, which may be used as a supplemental identification.
- May utilize some web-scraping to access further photos

Method:

- 5 photos from each species will be utilized to characterize wood. Pictures will be of different woods, and or, different areas on same wood.
- Database will convert to JSON format and utilize Convolutional Neural Networks methodology.
- Limit initial creation to 5 samples - those shown on right.

Time-Line

Jan 1	Project initialized GitHub
Jan 7	Proposal Submitted DataBase created Exported to AWS Bucket/Instance
Jan 14	CCN application created
Jan 21	IOS app integrate with CCN application
Jan 28	Testing/refinement Possible 2nd level identification

Species	Picture
Red Oak	
Cherry	
Beach	
White Oak	
Ash	

Process

- 1) End Grain Photo submitted
- 2) Analyzed
- 3) Prediction Made
- 4) Long Grain Picture Submitted
- 5) Narrowing Down of Prediction
- 6) Recommendations made for further classification

EXAMPLES:

Given wood, ash

very similar to White Oak

End grain photos would probably result in a pretty close match between either ash or white oak. Submission of side grain photos would probably show the characteristic medulla rays visible in white oak, but not in ash. This second photo would allow classification to get reasonably close to a 80% prediction.

Given wood, poplar

very similar to Cherry

End grain photos would probably result in a pretty close match between either poplar or cherry. Submission of side grain photos (as we assuming gray scale) would probably not narrow down the prediction. Would like result to have suggestions for further classification, like in this example - smell, color, hardness - could help narrow down correct classification.