

Rec Shokubutsu: A Plant Identification Application Using Convolutional Neural Network Neel Madhab Roy Department of CSE Chandigarh University Mohali, India 19BCS6064@cuchd.in Abstract Plants are the backbone of all life and there are about 40 million plant species on Earth providing us with oxygen, food and many essential products helping for the existence of human life. Species knowledge is important for biodiversity conservation as well. Identification of plants by conventional approach is complex, time consuming, and frustrating tor non experts due to the use of botanical terms. This project uses convolutional neural network models to perform plant species identification using simple leaves images of plants, through deep learning methodologies.... (only first 800 chars shown)



Analysis complete. Our feedback is listed below in printable form. Some of the items have been truncated or removed to provide better print compatibility.

Plagiarism Detection

Original Work

Originality: 92%



This paper seems original. Nevertheless, make sure to properly cite outside sources.

The following web pages may contain content matching this document:

https://www.ajol.info/index.php/tjfnc/article/v...

https://www.ijert.org/plant-identification-meth...

http://dx.doi.org/10.1155/2017/9581292 (http://dx.doi.org/10.1155/2017/9581292)

https://www.studymode.com/essays/biology-revisi...

http://dx.doi.org/10.1155/2018/6973103 (http://dx.doi.org/10.1155/2018/6973103)

https://arxiv.org/abs/1911.05494

http://www.ethnobiomed.com/content/4/1/17 (http://www.ethnobiomed.com/content/4/1/17)

https://www.easternarc.or.tz/wp-content/uploads...

http://dx.doi.org/10.1155/2019/5219471 (http://dx.doi.org/10.1155/2019/5219471)

https://arxiv.org/abs/1702.01741

http://dx.doi.org/10.1155/2018/3521905 (http://dx.doi.org/10.1155/2018/3521905)

https://www.termpaperwarehouse.com/essay-on/Bes...

https://en.wikipedia.org/wiki/Andrea%20Frome

https://www.studymode.com/essays/Indian-Restaur...

https://link.springer.com/chapter/10.1007/978-3...

http://dx.doi.org/10.1155/2014/537157 (http://dx.doi.org/10.1155/2014/537157)

https://en.wikipedia.org/wiki/Grands%20Prix%20d...

https://en.wikipedia.org/wiki/United%20Retail%2...

https://arxiv.org/abs/2012.12125

https://arxiv.org/abs/1404.3877

https://simple.wikipedia.org/wiki/Highland%20ca...

http://www.indianjnephrol.org/article.asp?issn=... (http://www.indianjnephrol.org/article.asp?issn=0971-

4065;year=2016;volume=26;issue=7;spage=1;epage=1;aulast=Jha)

More info on our originality scoring process (http://www.PaperRater.com/page/plagiarism-detection) .

<u>Upgrade to premium (http://www.PaperRater.com/pricing)</u> to see which phrases were found to be un-original



Spelling Suggestions

Error	Suggestion
Shokubutsu	Possible spelling mistake found
Convolutional	Convolution, Convolutions
Mohali	Moral, Morale, Mali, Somali, Modal, Morals, Mohawk, Mohave, Mowgli, Mohair, Mohacs, Modals
time consuming	time- consuming
convolutional	convolution, convolutions
dataset	data set
simples	simple, samples, simpler, simplest, simplex, similes, dimples, pimples, wimples, simple s
begin	being
Tensorflow	Possible spelling mistake found
time consuming	time- consuming

PIVI	
time consuming	time- consuming
dentification	identification
systematics	systematic, systematic s
Sk	SK, So, OK, UK, St, Ask, Sky, Ski, SD, SF, Mk, Ska, Sh, Sf, Pk, AK, Bk, Gk, K, S, SA, SC, SE, SJ, SO, SS, ST, SW, Sb, Sc, Se, Si, Sm, Sn, Sp, Sq, Sr, Ck, Wk, S k
Banzi	Bani, Banzai
Abayo	Away, Bay, Bays, Mayo, EBay, Abby, Alamo, Aback, Bayou, Abaft, Abate, Ably, Amado, Kayo, Abase, ABA, Abash
Skanda	Stand, Stands, Santa, Sand, Scandal, Sandy, Kinda, Amanda, Rwanda, Sandra, Uganda, Sands, Stanza, Wanda, Kana, Panda, Luanda, Sandal, Sana, Kaunda, Shana, Shanna, Skein, Skeins, Sanka, Shandy

Convolutional	Convolution, Convolutions
convolutional	convolution, convolutions
convolutional	convolution, convolutions
CNNs	CNN, Cans, CNS, Inns, Cons, CNN s
convolutional	convolution, convolutions
overfitting	over fitting
Overfitting	Overfilling
leafsnap	leaf snap, leafs nap
datasets	data sets
Pre- processing	Reprocessing
datasets	data sets
rescaling	resealing, descaling, re scaling
adam	Adam, Adams, dam, Ada, madam, Adm, Adar, Edam, ADM, Adan, Adas, Madam, a dam, ad am
backend	backed, back end
dentification	identification

Grammar

Grammar Suggestions

Error	Suggestion
	Possible typo: you repeated a whitespace

5 PM	
	Possible typo: you repeated a whitespace

	Possible typo: you repeated a whitespace
	Possible typo: you repeated a whitespace
resources	resources', resource's
	Possible typo: you repeated a whitespace

) FIVI	
	Possible typo: you repeated a whitespace
identifying	Identifying
	Possible typo: you repeated a whitespace
	Possible typo: you repeated a whitespace
	Possible typo: you repeated a whitespace

	Possible typo: you repeated a whitespace
Hence	Hence,
	Possible typo: you repeated a whitespace

	Possible typo: you repeated a whitespace
achieved best	achieved the best
	Possible typo: you repeated a whitespace

6 PM	
	Possible typo: you repeated a whitespace
п	ш
п	п
	Possible typo: you repeated a whitespace
п	и
п	II
	Possible typo: you repeated a whitespace

PIVI	
	Possible typo: you repeated a whitespace
"	п
п	п
	Possible typo: you repeated a whitespace
	Possible typo: you repeated a whitespace
	Possible typo: you repeated a whitespace
п	и
п	п
	Possible typo: you repeated a whitespace

5 PM	
п	ш
=	п
	Possible typo: you repeated a whitespace

PIVI	
	Possible typo: you repeated a whitespace

Word Choice

Word Choice Suggestions

Suggestions for improving word choice appear in the text underlined in blue. Select this text to view the tips.

Word Choice

Usage of Bad Phrases

Bad Phrase Score: 1.66 (lower is better)

The Bad Phrase Score is based on the quality and quantity of trite or inappropriate words, phrases, egregious misspellings, and cliches found in your paper. You did equal or better than **76%** of the people in your education level.





Great! You have a solid understanding of which phrases to use in your writing, which places you above average.



Usage of Transitional Phrases

Transitional Words Score: 55

This score is based on quality of transitional phrases used within your paper. You did equal or better than **36%** of the people in your education level.





Your usage of transitional phrases is below average. Please review the writing tips below.

One sign of an excellent writer is the use of transitional phrases (e.g. therefore, consequently, furthermore). Transitional words and phrases contribute to the **cohesiveness**

(http://www.PaperRater.com/vocab_builder/show/cohesiveness) of a text and allow the sentences to flow smoothly. Without transitional phrases, a text will often seem disorganized and will most likely be difficult to understand. When these special words are used, they provide organization within a text and lead to greater understanding and enjoyment on the part of the reader.

The following transitional phrases were found in your document: and, since, usually, for example, however, therefore, rather, in addition, moreover

Consider using additional transitions where appropriate:

- consequently (http://paperrater.com/vocab_builder/show/consequently)
- nevertheless (http://paperrater.com/vocab_builder/show/nevertheless)
- notwithstanding (http://paperrater.com/vocab_builder/show/notwithstanding)
- accordingly (http://paperrater.com/vocab_builder/show/accordingly)
- conversely (http://paperrater.com/vocab_builder/show/conversely)

ordinarily (http://paperrater.com/vocab_builder/show/ordinarily)

Transitional phrases may be used in various places in a text:

- · between paragraphs
- between sentences
- · between sentence parts
- · within sentence parts

Consider this example:

She is one of the most kind persons I have ever known. **Moreover**, she is generous, patient and possesses a magnificent sense of humor.

The word 'moreover' contributes to greater unity or cohesion between sentences and allows the text to flow more smoothly.



Sentence Length Info

Total Sentences: 88 **Avg. Length**: 19.7 words

Short Sentences (< 17 words): 34 (39%) **Long Sentences** (> 35 words): 4 (5%)

Sentence Variation: 9.9 words (std deviation)



There is no 'best' sentence length. However, your average sentence length is within an acceptable range.

Line chart of the length of each sentence (first 50 sentences). A jagged chart indicates variation.



Helpful Resources:

• Effective Use of Sentence Length (http://blog.paperrater.com/2015/05/effective-use-of-sentence-length.html)



Readability Indices

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Passive Voice

Passive Voice Sentences: 33.0%

Many writers feel that passive voice represents poor writing form, as it allows the object of an action to be the subject of a sentence. The following sentences were detected as having passive voice:

- Training of the model was performed by using a dataset of 184 distinct ...
- ... neural network is going to be implemented using Tensorflow and will be ...
- ... plants are the sole raw materials.
- ... of macro-organisms on the planet is estimated at about 10 million.
- It is required or useful for large parts of ...
- ... numbers, and each year, new species are reported in different parts of the world [4].
- The proposed CNN technique has been applied to classify 100 plant species with ...
- ... paper by discussing how it can be expanded to support and integrated plant ...
- ... lasers different depth points can **be marked** and connected to form an image ...
- ... fingerprint of the leaf which can **be used** to recognize the plant.
- The second one is Leaf recognition can **be done** by tracing its outline on a ...
- ... used in image and video processing.
- It is designed to process data with a grid-like ...
- In a CNN, the input data is passed through multiple "layers" of small ...
- These operations are designed to identify certain features or ...
- For example, a CNN might **be trained** to recognize edges, shapes, or ...
- ... more "convolutional" filters, which are used to scan over the input data and ...
- The output of each layer is then passed to the next layer, until the final ...
- During training, the dropout rate is typically set to a value between 0.2 and 0.5.
- ... step At test time, the dropout rate is usually set to 0, which means that all of the ...
- ... performance of a CNN, and **is often used** in conjunction with other ...
- ... The following methodology will **be followed** to achieve the objectives defined ...
- Pre-processing will **be done** on datasets: such as image ...
- • A CNN model is implemented with 2 dense layers.
- The model is to **be trained** for 50 epochs with 'adam' optimizer ...
- ... training loss with validation loss is done.
- • The web application is created to access the model and identify ...
- ... the models will be good enough to **be used** in web application for effective ...
- ... and each year, new species are reported in different parts of the world.



Helpful Resources:

Active vs Passive Voice (http://blog.paperrater.com/2015/05/passive-voice-vs-active-voice.html)



Sentence Beginnings

Simple Sentence Starts: 13%

You did equal or better than **76%** of the people in your education level.





Well done! Your sentences display variety in their beginnings.

Variety is the hallmark (http://www.PaperRater.com/vocab_builder/show/hallmark) of a good writer and this is especially true in regards to sentence starts. Creatively arranging sentence beginnings breaks up the monotony (http://www.PaperRater.com/vocab_builder/show/monotony) and choppy style associated with a simple noun phrase followed by a verb. This does NOT mean that all sentences should begin with prepositional phrases, transitions, or adverbial phrases, but it does mean that you should be certain to pay attention to sentence starts and deliberately edit for variety if necessary. Here are some simple sentence starts that we found in your text:

- Plants are the...
- Species knowledge is important...
- We are going...
- Plant species identification provides significance...
- It is required...
- Plants are very...
- Author used four...
- Author achieved best...
- It is designed...
- Plants are very...
- We need more...

Starts by Part of Speech:

Adjective: 3% Adverb: 8% Article: 0% Conjunction: 1% Noun: 21% Preposition: 8% Pronoun: 7% Verb: 3% Other: 30%



Helpful Resources:

• Sentence Beginnings - your sentences' first impression (http://blog.paperrater.com/2015/06/sentence-beginnings.html)

* Vocabulary Words

Usage of Academic Vocabulary

Vocabulary Score: 375.02

This score is based on the quantity and quality of scholarly vocab words found in the text. You did equal or better than 83% of the people in your education level.



Vocabulary Word Count: 118 Percentage of Vocab Words: 9.74% Vocab Words in this Paper (top 20):

taxonomies, methodologies, synthesis, ecologists, taxonomic, inception, predictive, conjunction, epochs, biodiversity, conservation, identification, conventional, neural, distinct, implement, implemented, central, significance, categorization



Your knowledge of refined language is magnificent. Visit our Vocab Builder (http://www.PaperRater.com/vocab_builder/index) to expand your internal dictionary even more.

Tips

Whether you are writing for a school assignment or professionally, it is imperative that you have a vocabulary that will provide for clear communication of your ideas and thoughts. You need to know the type and level of your audience and adjust your vocabulary accordingly. It is worthwhile to constantly work at improving your knowledge of words. To help with this task, please consider using our Vocabulary Builder (http://www.PaperRater.com/vocab_builder/index) to improve your comprehension and usage of words.

→ Grade

Auto Grader

Grade: 81 B

The grade above is NOT complete! We do not actually use a crystal ball to generate your grade. Instead, this grade takes into account spelling, grammar, word choice, style, vocabulary, and more; but it does NOT examine the *meaning* of your words, how your ideas are structured, or how well your arguments are supported. We should also mention that our automated grader doesn't **always** get things right. So, please consider this grade to be one facet of your paper's overall grade.

