ICGEFAST 2021

INTERNATIONAL CONFERENCES
ON GREEN ENGINEERING FOOD AGRICULTURAL SCIENCE AND TECHNOLOGY

Venue: Online Platform (Zoom) on 10-11 November 2021

ABSTRACT BOOK

Organized by

GREEN ENGINEERING SOCIETY

Sponsored by

Bank Nagari
BANK BRI
Telkom Indonesia
Mitra Kerinci RNI Group
CORTEVA agriscience
BNI
KPN
POLITANI

INTERNATIONAL CONFERENCE ON GREEN ENGINEERING
FOOD AGRICULTURAL SCIENCE AND TECHNOLOGY
POLITEKNIK PERTANIAN NEGERI PAYAKUMBUH
Jalan Raya Negara KM.7 Tanjung Pati, Postal Code 26271
Harau Sub-District, Limapuluh Kota District, West Sumatera Province
Phone. (0752) 7754192-Facs (0752) 7750220
Email : icgefast@gmail.com ,Web : https://conferences.gesociety.org/icgefast

Identification of Seeds using Principal Component Analysis

Indra Laksamana[*1], Hendra[1], jamaluddin[1], Trinovita Zuhara J[1], Mohammad Riza Nurtam[1], Amrizal[1], Rosda Syelly[2]

[1]Computer Engineering Technology Study Program, Politeknik Pertanian Negeri Payakumbuh, Jalan Raya Negara KM7, Tanjung Pati, Lima Puluh Kota, West Sumatera, Indonesia.
[2]Computer Engineering Study Program, Sekolah Tinggi Teknologi Payakumbuh, Jalan Khatib Sulaiman, Sawah Padang, Payakumbuh, West Sumatera, Indonesia.

*E-mail: indra.puskom@gmail.com

Abstract. Seeds are varied in several attributes like size, color, form, etc. and that varieties can identify plants species. However, there are some plant species that have similar seed, so that it is important to have additional characteristics to support the identification process. This research is using Principal Component Analysis method to identify plant species by using its seeds. The PCA technique is used to reduce the complexity of the information by reducing data dimensions, and only stores 75% of the information. By reducing the dimension, the data size is reduced and therefore can speed up data processing time. In this research we collect 100 plant seed images with similar look or figure one another namely sapodilla (*Manilkara zapota*), soursop (*Annona muricata*), cucumber (*Cucumis sativus*), star fruit (*Averrhoa carambola*), grape (*Vitis vinivera*), melon (*Cucumis melo*), apple (*Malus domestica*), lime (*Citrus aurantifolia*), watermelon (*Citrullus lanatus*), and chili pepper (*Capsicum annuum L.*). With K-Fold Cross Validation, resulting 10 experiment tables with 83% acuracy. Omission errors are found in soursop, star fruit, grape, aple, lime, and water melon seeds. While most commission error are found in apple seeds as many as 8 times.
Keyword: image seeds. Principal Component Analysis, tropical plants identification.

CERTIFICATE

Number: 92/PL25/PT/2021

This is to certify that

Indra Laksmana

has been presented his/her paper entitled:

Identification of Seeds using Principal Component Analysis

at

INTERNATIONAL CONFERENCE ON GREEN ENGINEERING, FOOD, AGRICULTURAL SCIENCE AND TECHNOLOGY

November 10-11 2021, Venue: Online Platform (Zoom).

Director
Politeknik Pertanian Negeri Payakumbuh

Ir. Elvin Hasman, MP

General Chair

Dr. Rilma Novita

Sponsored by

Organized by