PROJECT REPORT

THE IDENTIFICATION AND CLASSIFICATION OF MICROPLASTICS BY FTIR USING GAUSSIAN MIXTURE AND NAIVE BAYES

TAN, YUDISTIRA SURYAKENCANA ADISATRIA
19.K1.0002

Faculty of Computer Science
Soegijapranata Catholic University
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HALAMAN PENGESAHAN

Judul Tugas Akhir:	:	The Identification and Classification of Microplastics by FTIR using Gaussian Mixture and Naive Bayes
Diajukan oleh	:	Tan, Yudistira Suryakencana Adisatria
NIM	:	19.K1.0002
Tanggal disetujui	:	21 Desember 2022
Telah setujui oleh		
Pembimbing	:	Yonathan Purbo Santosa S.Kom., M.Sc
Penguji 1	:	Yonathan Purbo Santosa S.Kom., M.Sc
Penguji 2	:	Hironimus Leong S.Kom., M.Kom.
Penguji 3	:	R. Setiawan Aji Nugroho S.T., MCompIT., Ph.D
Penguji 4	:	Rosita Herawati S.T., M.I.T.
Penguji 5	:	Y.b. Dwi Setianto S.T., M.Cs.
Penguji 6	:	Yulianto Tejo Putranto S.T., M.T.
Ketua Program Studi	:	Rosita Herawati S.T., M.I.T.
Dekan	:	Dr. Bernardinus Harnadi S.T., M.T.

Halaman ini merupakan halaman yang sah dan dapat diverifikasi melalui alamat di bawah ini.

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I, the undersigned:

Name : Tan, Yudistira Suryakencana Adisatria

ID : 19.K1.0002

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Tan, Yudistira Suryakencana Adisatria

19.K1.0002

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Yang bertanda tangan dibawah ini:

Nama	: Tan, Yudistira Suryakencana Adisatria
Program Studi	: Teknik Informatika
Fakultas	: Ilmu Komputer
Jenis Karya	: Skripsi

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19.K1.0002

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ABSTRACT

Microplastics has become more widely discussed recently. Detecting microplastics can be done using Fourier Transform Infrared Spectroscopy (FTIR). The results provide an absorption band that must be translated into a polymer. However, these results have different sizes of data, varied data, and take a long time to translate if done manually. This can be solved using Gaussian Mixture and Naïve Bayes by modifying the preprocessing to create same-sized data. The results are preprocessing which succeed in equalizing the length of the data, having good performance in the means value which is likely the same as the reference and having high accuracy, also being able to be used as supporting data when manual matching is done.

Keyword: microplastics, FTIR, classification, gaussian mixture, naïve bayes

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