PENGELOMPOKAN DATA LINIERITAS PEKERJAAN ALUMNI PRODI TIF POLIJE MENGGUNAKAN ALGORITMA *K-MEANS CLUSTERING*

(Clustering Of Job Liniearity Data Graduates From The TIF study program at POLIJE Using K-Means Algorithm)

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ABSTRACT

This research examines the linear grouping of job positions held by alumni of the Computer Engineering program at the State Polytechnic of Jember using the K-Means Clustering algorithm based on tracer study data from 2015 to 2018. The analysis focuses on two main attributes in a 2D space (x, y): the job positions of the alumni and the alignment of their work fields with the field of study in Computer Engineering. The study follows several data analysis steps, including preprocessing, optimal cluster number selection, K-Means model training, and clustering result evaluation. From a total of 375 alumni data points, the research identifies 2 clusters (k = 2). The optimal number of clusters, k, is determined using the Elbow Method, resulting 58 % in Cluster 1 containing 216 alumni data items and 42% Cluster 2 containing 159 alumni data items, with a silhouette score of 0.61. By visualizing the linearities of job positions among Computer Engineering alumni into several clusters, this study aims to provide deeper insights into the variety of careers pursued by graduates of the program at the State Polytechnic of Jember. It also aims to reveal potential linear patterns among these job groups and serve as an evaluation tool to enhance the alignment between graduate qualifications and the needs of the job market.

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Keywords: *Clustering, Tracer Study, K-Means, Visualitation Cluster.*