

## ABSTRACT

### ***IMPLEMENTATION OF DEEP LEARNING, NLP (NATURAL LANGUAGE PROCESSING) AND DATA VUSIALIZATION TO GET CUSTOMER RESEARCH DATA FOR INSTAGRAM DIGITAL MARKETING***

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*A rapidly developing digital economy opens up new marketing methods that are adapted to 21st century business needs. In 2019, Hootsuite (Digital marketing agency) explained that more than 150 million Indonesians are connected to the internet and use social media. This allows social media to be the right data center for market research and customer research. This situation causes the need for tools for insight analysis of the content posted. To overcome these problems, application architecture is needed to do the analysis of images and text that are posted. This method can be done with a variety of application analysis instaram, both paid and free. This high paid application makes many companies want an open application to get insights from Instagram. In this study, researchers developed an Instagram dashboard application architecture insight with several methods. The method for analyzing images posted using the method of deep learning image classification, while for text analysis using the Natural Language Processing method, and also data visualization to make it easy for users to read insights from data that has been mined and processed. The results of this study are expected to meet the needs of startup / agency digital marketing towards the need for open source instagram insight applications. The built-in dashboard system provides an analysis of the interests of hashtags, content and follower activity from the target of an Instagram account*

**Keywords:** *Deep Learning, CNN, Digital Marketing, Data Visualization, Data Mining, Natural Language Processing (NLP), Digital Marketing*