

Deep Learning Framework for Predicting LinkedIn Follower Count Range

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LinkedIn has become a key platform for professional networking, where follower count increasingly reflects visibility, credibility, and digital influence. Existing research offers only limited insight into how different factors jointly shape follower growth. Insights from other social media platforms do not translate well to LinkedIn's professional context. This study examines factors influencing LinkedIn follower count using a multiinput deep learning model. The model integrates three major data modalities professional, demographic, and facial-emotional features allowing a comprehensive multimodal prediction approach. The study focuses on three key areas: determining whether a 1D CNN based multimodal model performs better than classical machine learning models; identifying which feature groups most strongly influence follower count; and evaluating the extent to which a multi-input 1D CNN can learn complex non-linear interactions more effectively than traditional approaches. Structured and LinkedIn profile data and facial-emotional indicators obtained based on profile images were used in classification. Standardized cleaning, one-hot encoding and MinMax scaling were used to process features. The classical models used were compared to a 1D CNN with a multi-input. Accuracy, F1-score, MAE, MSE and Explainable AI techniques were used as model evaluation. According to the results, LinkedIn user following is mainly motivated by career advancement and profile display and not by demographical factors. The research conclude that multimodal deep learning is a highly effective way to predict and interpretable in professional network analytics, which has both a methodological and practical implication on understanding digital influence.

Keywords: *LinkedIn Analytics; Deep Learning; Multi-Input 1D CNN; Follower Count Prediction; Machine Learning Comparison*