Neural Networks and Genetic Algorithms Approach for Word Correction and Prediction

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Abstract : Aiming at helping people with some movement limitation that makes typing and communication difficult, there is a need to customize an assistive tool with a learning environment that helps the user in order to optimize text input, identifying the error and providing the correction and possibilities of choice in the Portuguese language. The work presents an Orthographic and Grammatical System that can be incorporated into writing environments, improving and facilitating the use of an alphanumeric keyboard, using a prototype built using a genetic algorithm in addition to carrying out the prediction, which can occur based on the quantity and position of the inserted letters and even placement in the sentence, ensuring the sequence of ideas using a Long Short Term Memory (LSTM) neural network. The prototype optimizes data entry, being a component of assistive technology for the textual formulation, detecting errors, seeking solutions and informing the user of accurate predictions quickly and effectively through machine learning.