The purpose of this research is to analyze instant messenger chat conversations between random pairs in order to identify certain nonverbal features that can be used to determine information about the individuals. By correctly selecting these features, a computer model is created that is able to accurately predict attributes of these users. The major focus is determining whether one user likes the other, with an emphasis on sexual attraction, but other attributes such as gender are predicted as well. Various methods for selecting features are compared as well as the accuracy of various models. Twitter data is also analyzed using these methods in order to demonstrate their applicability to very large datasets.