



Second Annual Twin Cities ASA FALL RESEARCH CONFERENCE



Medtronic

MEDTRONIC, MOUNDS VIEW, MN

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Undergraduate Student Posters

The Determination of an Effective Smile

Mark Ruprecht, University of Minnesota–Twin Cities

Facial paralysis, the loss of facial movement caused by nerve damage, can occur from injury, stroke, or disease. The condition affects many individuals and can severely complicate the ability to express emotion, a core part of social interaction and communication. In the present study, we use a computer-animated 3D facial tool to investigate the dynamic properties of an effective smile. Specifically, we examine how spatiotemporal properties of the smile trajectory (mouth angle, smile extent, dental show, and timing asymmetries) influence its perception in a large sample of fairgoers ($n = 788$) from the 2015 Minnesota State Fair. Our findings help establish quantitative benchmarks for assessing the efficacy of a smile and provide foundation for the development of methods assessing the post-operational success of facial reconstructive surgery.

Hollywood Movie Analysis by Machine Learning

Leixin Xia, Jong-Min Kim, University of Minnesota-Morris

Statistical models are used to predict Hollywood movie related important variables such as Movie running theaters and Movie running weeks of based on Movie genres, and the forecasting is done by using the well-known machine learning methods: Linear Regression, Multivariate Adaptive Regression Splines, Support Vector Machines (SVM), K-Nearest Neighbor (K-NN) algorithm, Neural Network and Random Forest and Ridge regression. We will provide empirical tests of its predictive ability.