



MASTER'S THESIS DEFENSE
**A Novel Device for Measuring 2-Dimensional
Saccadic Eye Movements Using Infrared Reflectance**

By
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Castleman, Room 212

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Abstract:

A novel infrared reflectance eye tracking system was developed and implemented for the recording of 2-dimensional saccadic eye movements. The eye tracking system simultaneously measures horizontal and vertical saccades in both eyes in a noninvasive manner. Previous eye infrared tracking systems were capable of measuring horizontal or vertical measurements in a single eye, but never simultaneously. This lack of instrumentation limits the available data on eye movements. The 2-D infrared eye tracker is an inexpensive, non-invasive system that allows researchers to gather accurate, precise, and reliable data for use in physiological models. In addition to eye movements, the system measures head movement using a 3-axis accelerometer. The addition of head movement data allows researchers to gain insight into the effect head dynamics have on eye movements.