Title: **StressCam: Non-contact Measurement of Users' Emotional States through Thermal Imaging**

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Abstract: We present a novel methodology for monitoring the affective state of computer users. The method is based on thermal imaging of the face. To the user, the imaging system appears much like a video-conferencing camera. The method does not require contact with the subject and it is passive; therefore, monitoring can be continuous and transparent to the computer user. We have found that user stress is correlated with increased blood flow in the frontal vessel of the forehead. This increased blood flow dissipates convective heat, which can be monitored through thermal imaging. The system has been evaluated on 12 subjects, and compared against real-time measurements of Energy Expenditure (EE). The new method is highly correlated with the established, but akward EE methodology. The StressCam methodology is applicable to many instances where the real time measurement of users' emotional states is needed.