

Machine Learning in Motion

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Student Researchers: Machine Learning in Motion VIP Team & Senior Design Students

The first iteration of *In Motion* premiered at the Ringel Gallery in Stewart Center on August 14 - October 4, 2024. It was an interactive installation that utilized machine learning and computer vision to track the physical coordinates of visitors to the gallery. This data impacted sound, video, and images in real-time creating a unique co-authored work of art with every participant's experience. *In Motion* is a collaborative, interdisciplinary work with participating artists and engineers from the fields of Computer Science, Dance, Electrical Engineering, Electric-Time Based Art, Mathematics & Statistics, and Music. *In Motion* featured two interactive multimedia works: *Trailing Momentum* and *Sundown Serenades*.

The 2024-25 school year has presented an opportunity for the MLM VIP Team to upgrade and strengthen the interactive system by reducing lag time, incorporating the Z coordinate, and implement consistent tracking of individuals while in the camera frame. In addition to these improvements, the team has grown to include a group of four senior design students. The next iteration of *In Motion* will be an interactive instillation that includes real-time video and audio projection and manipulation. As the participants move through the space, web cameras will capture data on their changing locations impacting the video and sound in real-time. Students will see their images projected to create a unique work of choreography. Videos from each day of BGR will be layered together to create a collage effect. Every participant will shape and evolve the outcome of the art.

After engaging in the 2024 Boiler Gold Rush Entertainment Challenge, the team learned just how powerful the experience was when a student understood and saw how their participation impacted the art. We seek to strengthen this relationship for the 2025 Boiler Gold Rush Entertainment Challenge. The video content will be generated and manipulated live including the students as the subject matter. We also would like to select a location that all BGR students pass through so that our project can reach more individuals. If selected, we hope to work with the BGR leadership team to find a suitable location.

Video of *In Motion* from the 2024 Boiler Gold Rush Entertainment Challenge:

<https://vimeo.com/1026299732>

Machine Learning in Motion 2005 BGR Entertainment Challenge Budget

Equipment

HD Projector	2600.00
Cables and Adaptors	200.00
Total	2800.00