**Machine Learning on Embedded Systems to Assess Correct Form During Weight Training**

**Impact Statement:**

This research harnesses machine learning to make weight training safer and more effective, potentially transforming fitness practices.

**Research Abstract:**

This study explores the application of machine learning in embedded systems to provide immediate feedback for weight training exercises. By employing Inertial Measurement Units (IMUs), it aims to accurately classify different exercises and ensure the correct form and posture, thus enhancing athlete safety and promoting effective muscle development. The integration of advanced algorithms with detailed motion data is expected to significantly reduce the risk of injuries, aligning with the Fulton Research Theme's focus on Health.