**LITERATURE SURVEY**

**Higa K, Iwamoto K. “Robust Shelf Monitoring Using Supervised Learning for Improving On-Shelf Availability in Retail Stores”. Sensors (Basel). 2019 Jun 17;19(12):2722. doi: 10.3390/s19122722. PMID: 31213015; PMCID: PMC6631981**

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This paper is an extended version of our paper published in “Higa, K.; Iwamoto, K. Robust Estimation of Product Amount on Store Shelves from a Surveillance Camera for Improving On-Shelf Availability. In Proceedings of the 2018 IEEE International Conference on Imaging Systems and Techniques

**Bottani, E.; Bertolini, M.; Rizzi, A.; Romagnoli, G. Monitoring on- shelf availability, out-of-stock and product freshness through RFID in the fresh food supply chain. Int. J. RF Technol. Res. Appl. 2017, 8, 33– 55.**

The recent mpox outbreak (in 2022–2023) has different clinical and epidemiological features compared with previous outbreaks of the disease. During this outbreak, sexual contact was believed to be the primary transmission route of the disease. In addition, the community of men having sex with men (MSM) was disproportionately affected by the outbreak. This population is also disproportionately affected by HIV infection. Given that both diseases can be transmitted sexually, the endemicity of HIV, and the high sexual behavior associated with the MSM community, it is essential to understand the effect of the two diseases spreading simultaneously in an MSM population. Particularly, we aim to understand the potential effects of HIV on an mpox outbreak in the MSM population

**Michael, K.; McCathie, L. The Pros and Cons of RFID in Supply Chain Management. In Proceedings of the 4th Annual 4th International Conference on Mobile Business, ICMB, Sydney, NSW, Australia, 11– 13 July 2015; pp. 623–629**

**Moorthy, R.; Behera, S.; Verma**

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**Higa, K.; Iwamoto, K. Robust estimation of product amount on store shelves from a surveillance camera for improving on-shelf availability. In Proceedings of the IST 2018—IEEE International Conference Imaging Systems and Techniques Proceeding, Kraków, Poland, 16–18 October 2018; pp. 1–6.**

Ball spin estimation in sports is important for analyzing the game. Since spin is generally too fast to be captured by a conventional camera a high-speed camera is often used to capture images of the ball and estimate its spin. However since a high-speed camera is not robust to changes in the lighting conditions it is difficult to estimate spin in some environments. To solve these problems this paper proposes a new method for ball spin estimation using an event camera. An event camera is a sensor inspired by the visual system of animals which outputs the brightness changes in a scene. Event cameras have advantages such as high temporal resolution and high dynamic range and can accurately capture the motion of a fast-spinning ball in various lighting conditions. Experimental results in a synthesized dataset showed that the proposed method can stably estimate spin up to 500 rps. It is also confirmed that the proposed method can estimate spin in the data obtained from actual sports games.