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Policy-Governed Content Mediation Model for Mobile Augmented Reality Applications

Mobile augmented reality (MAR) is a portable implementation of augmented reality (AR) that enables real-time interaction between digital content and the actual, physical world. Recently, it has been implemented in mobile applications (i.e., mobile augmented reality applications or MAR-Apps) accessible through smartphones, tablets, etc. However, even as millions of people use MAR-Apps, there is an absence of regulation over how the apps operate.

The use of MAR-Apps inside sensitive physical spaces (e.g., memorials, hospitals, museums, etc.) and the potentially unwilling sharing of MAR content (e.g., personal user data, content generated as a part of MAR functionality, GPS data, etc.) between users or between users and third parties should be considered so that the safety and privacy of users is preserved.

Researchers at Arizona State University and Texas A&M University have developed a method with respect to the generation, distribution, and consumption of MAR content inside physical spaces. This method takes into consideration preferences specified by users and space owners (i.e., an individual or group of individuals with a legitimate right to decide on the MAR content that can be released within a certain sensitive physical space). This method, when applied to MAR-Apps, results in policy-governed apps, which observe such preferences to mediate the release of MAR content at run-time. The method can be considered a policy-governed content mediation model and regulates the distribution of MAR content to prevent security, safety, and privacy issues pertaining to MAR-Apps.

Related publications:

[Poster: Preventing Spatial and Privacy Attacks in Mobile Augmented Reality Technologies](#)

[SpaceMediator: Preventing Spatial and Privacy Attacks in Mobile Augmented Reality](#)

Potential Applications:

- Mobile augmented reality (MAR) applications

Benefits and Advantages:

- This policy-governed content mediation model takes into consideration the following preferences:
 - Regulations set by space owners over MAR content and usage in a sensitive space
 - Restrictions set by users over (1) the scope of MAR content they authorize

for interaction (i.e., who users are willing to encounter such as other users) and (2) the data MAR-Apps collect from them (i.e., personal user data)

- Improves MAR experience for users (e.g., by improving user safety and well-being)
- One-size-fits-all authorization policies for current and future MAR-Apps
- Can be deployed as a type of modular application programming interface (API) or as a minor modification in an existing MAR-App