

Immersive Notification Framework: Adaptive & Plausible Notifications in Virtual Reality

Summary

Notifications in everyday virtual reality (VR) applications are currently realized by displaying generic pop-ups containing the message of the sender within the immersive virtual environment (IVE). However, this approach tends to break the immersion of the user. In order to preserve the feeling of presence and the suspension of disbelief, we propose to adapt the method of notification to the current context of the user in the IVE and the messages' priority. We propose the concept of adaptive and immersive notifications in VR and introduce an open-source framework which implements our approach. The framework aims to serve as an easy-to-extend code base for developers of everyday VR applications. As an example, we implemented a messaging application that can be used by a non-immersed person to send text messages to an immersed user. We describe the concept and our open-source framework and discuss ideas for future work.



Standard Approach

- generic pop-up shown to user
- breaks immersion
- fixed, SDK - dependent look
- ignores virtual context



Our Approach

- adaptive and immersive animation
- maintains plausibility and immersion
- design freedom
- adapts to priority and virtual context

Example

A non-immersed user sends a message to a VR user via our smartphone app. Meanwhile, the recipient of the message is immersed in a virtual supermarket. The notification animation displayed in VR adapts to the priority of the message and the virtual context. In this example, our framework triggers different notification animations varying in obtrusiveness.

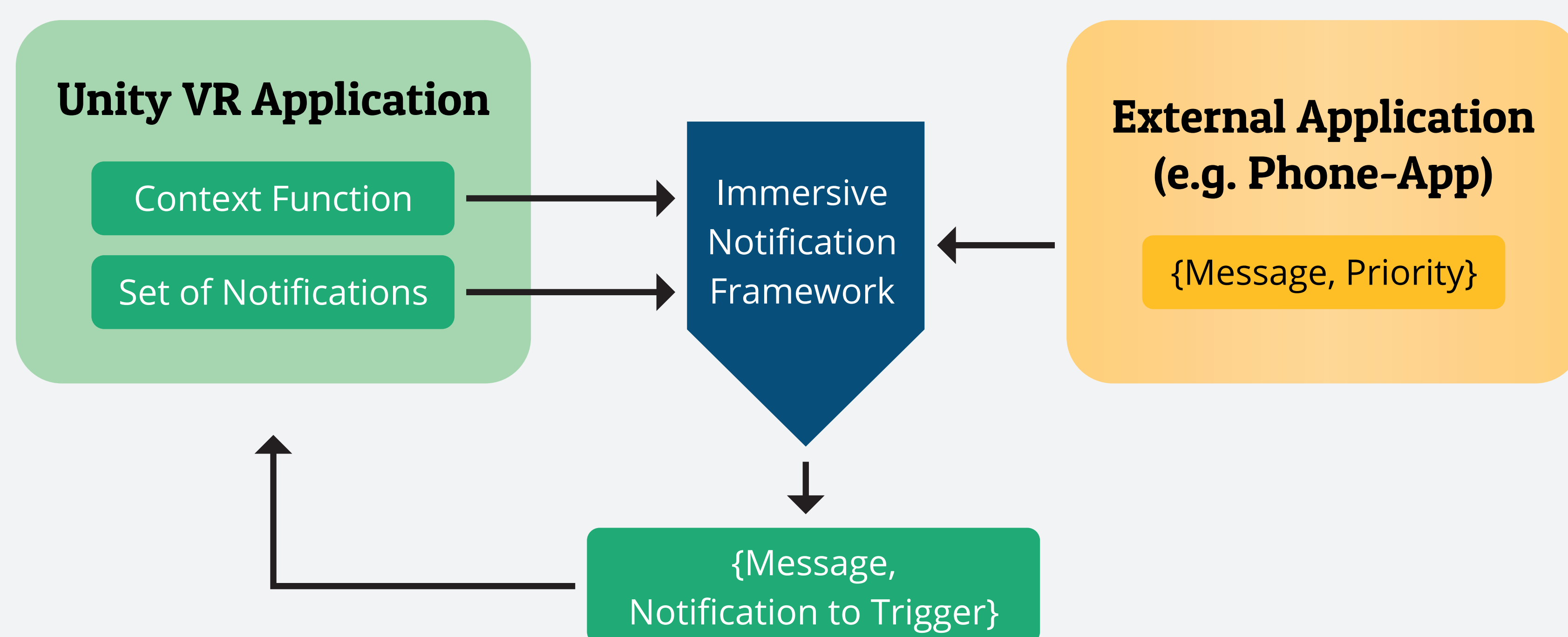
Level 0 - Unobtrusive



Level 1 - Medium

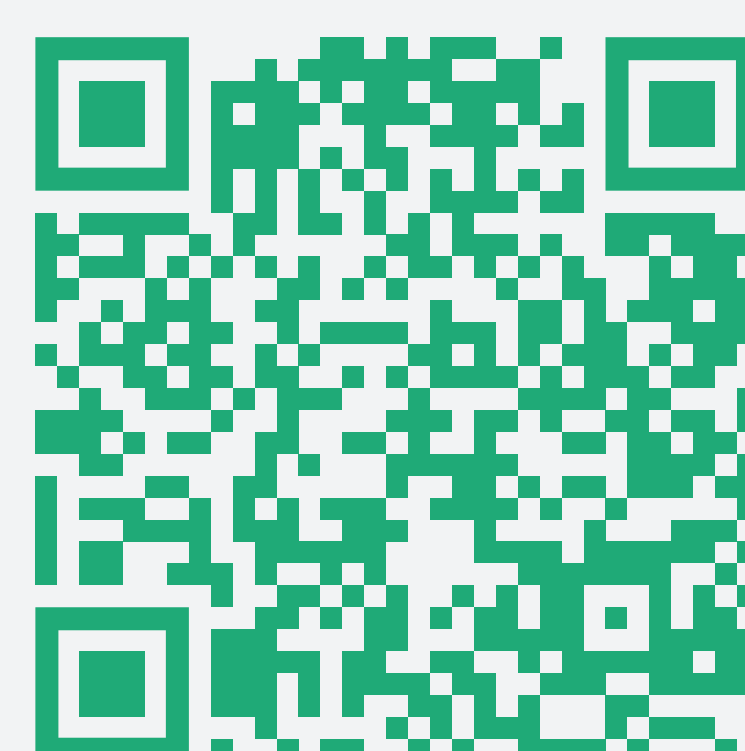


Level 2 - Obtrusive



Features

- open source @ GitHub for Unity
- our framework determines an animation to trigger
- choice of the animation is based on
 - virtual context
 - message's priority
- ensures design freedom for animations, e.g.
 - different levels of obtrusiveness
 - involving virtual objects or characters



Framework



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