**Erstmal quasi ungefiltert**

**Wekit-Quelle:**

* Haptic Feedback
* Directed Focus/Gaze
* Movement Instruction (Stand here)
* Autopause/-play
* Gaze to select/Cursor („activate spot by staring“)
* Shared pointer (Multi-user)
* Voice commands

**Andere Quellen**:

* OIV und was damit zusammenhängt
* Information filtering, je nach Bedürfnissen
* POI
* Gesture-Based Interaction
* Fiducial (auch nochmal bei Dunnleavy gucken)
* Audio Augmentation (Ternier)

**Name**: Haptic Feedback

**Forces/Problem**: User may miss visual or audio feedback; user does not receive appropriate feedback when “touching” augmented objects

**Feature/Solution**: Use haptic feedback either accurately or generally

**Examples**: Vibrotactile feedback is a standard feature of various game controllers. The Myo Armband can give such feedback while keeping the user’s hands free. The NormalTouch and TextureTouch devices are able to give somewhat accurate haptic representations of virtual objects.

**Effects/Consequences**: User may be more receptive to feedback, especially if their attention is not on the augmentation. Device has to implement haptic technology, or other devices have to be added – if the user has to hold the feedback device in one or more hands, their freedom of movement will be decreased. (Inappropriate) haptic feedback may break immersion.

**Sensors**: If accurate feedback corresponding to body movements is to be given, hand or full-body tracking must be used (e.g. with Leap, Kinect, …)

**Name**: Directed Focus

**Forces/Problem**: How do you direct a user’s attention to something when they have full control of their view?

**Feature/Solution**: Use an icon to indicate something the user should direct their attention towards; affix the icon to the screen, pointing towards the object of interest if it is not currently visible.

**Examples**: On a macro-scale, a Point of Interest is a form of directed focus if permanently displayed on a map and/or in direction.

**Effects/Consequences**: Directed focus icons can make for a more structured AR experience and avoid user confusion. However, they may obstruct other, possibly important elements and cause screen clutter. If multiple focus points exist at a time, information filtering may prove necessary to avoid this.

**Sensors**: The system always needs to be aware of the position of the focus point relative to the user or the user’s gaze. How this works is dependent on the AR device, but generally, IMUs will be most useful for this. If a macro-scale is desired, a system such as GPS will be necessary.

**Name**: Movement Instruction

**Forces/Problem**:

**Feature/Solution**:

**Examples**:

**Effects/Consequences**:

**Sensors**:

**Name**: Auto-play

**Forces/Problem**:

**Feature/Solution**:

**Examples**:

**Effects/Consequences**:

**Sensors**:

**Name**: Gaze Cursor

**Forces/Problem**:

**Feature/Solution**:

**Examples**:

**Effects/Consequences**:

**Sensors**:

**Name**: Shared Pointer

**Forces/Problem**:

**Feature/Solution**:

**Examples**:

**Effects/Consequences**:

**Sensors**:

**Name**: Voice Commands

**Forces/Problem**:

**Feature/Solution**:

**Examples**:

**Effects/Consequences**:

**Sensors**:

**Name**: Obscured Information Visualization

**Forces/Problem**:

**Feature/Solution**:

**Examples**:

**Effects/Consequences**:

**Sensors**:

**Name**: Information Filtering

**Forces/Problem**:

**Feature/Solution**:

**Examples**:

**Effects/Consequences**:

**Sensors**:

**Name**: Point of Interest

**Forces/Problem**: How can information be provided to users in a location-based system? How can information be bound to locations that are not reasonably accessible to developers?

**Feature/Solution**: Bind information to location data, automatically making it available to the user upon getting within a predefined range and allowing you to direct users to nearby Points of Interest.

**Examples**: Several Augmented Reality browsers have implemented Point of Interest approaches. Ternier, De Vries, et al. (2012) utilized it to guide students on a field trip.

**Effects/Consequences**: Points of interest either can not overlap or the system needs a method to handle such overlap. Constantly gathering information about user location and comparing it to points of interest may consume a lot of energy, which could negatively affect the user. If the user is directed towards points of interest, care must be taken to avoid screen clutter and information overload. A degree of precision is lost if only location data is used.

**Sensors**: Location technology such as GPS sensors; IMUs in vision-based systems with a local coordinate system.

**Name**: Gesture-based Interaction

**Forces/Problem**:

**Feature/Solution**:

**Examples**:

**Effects/Consequences**:

**Sensors**:

**Name**: Fiducial

**Forces/Problem**:

**Feature/Solution**:

**Examples**:

**Effects/Consequences**:

**Sensors**:

**Name**: Audio Augmentation

**Forces/Problem**:

**Feature/Solution**:

**Examples**:

**Effects/Consequences**:

**Sensors**: