Guide You to the Target Location by “Tugging”

Mobile devices cannot generate a persistent pull or push sensation because both user and device must be physically connected to the external ground. Our approach to generate a directed force sensation on mobile devices is to exploit the nonlinearity of human perception. We applied a pseudo-attraction force technique to a pedestrian navigation system.

Features
- The force display utilizes human perception of nonlinearity to generate a sensation of being pulled or pushed.
- The force display presents a persistent pulling or pushing sensation in all directions with a rotation mechanism.
- We found that active sensing reduced the error in the perceived direction.
- Our marker-based system covers a large area where GPS signals are not available.

Application Scenarios
- Route guidance in a museum
- Portable game players equipped with a haptic device
- Walking guidance not only for the elderly and people with visual disabilities but for everyone

Co-Innovation
We have been collaborating with University College London to elucidate the neural mechanism of the illusion.