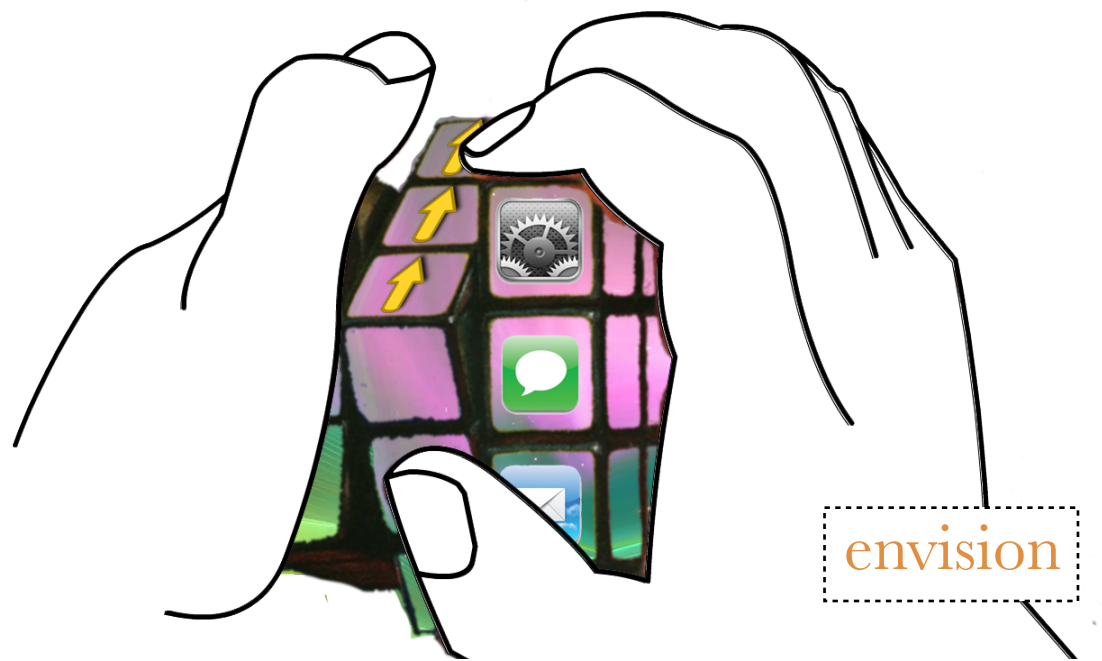




RUBIKON: A HIGHLY RECONFIGURABLE DEVICE FOR ADVANCED INTERACTION

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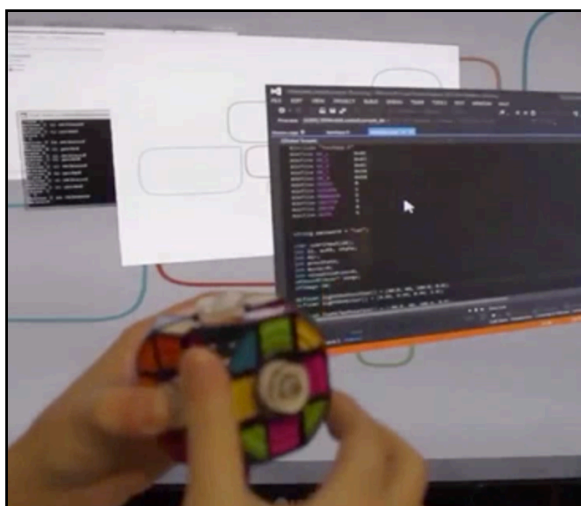


Rubikon is a device that allows users to interact with common user interfaces by using an augmented Rubik's Cube that senses users' actions and displays information.

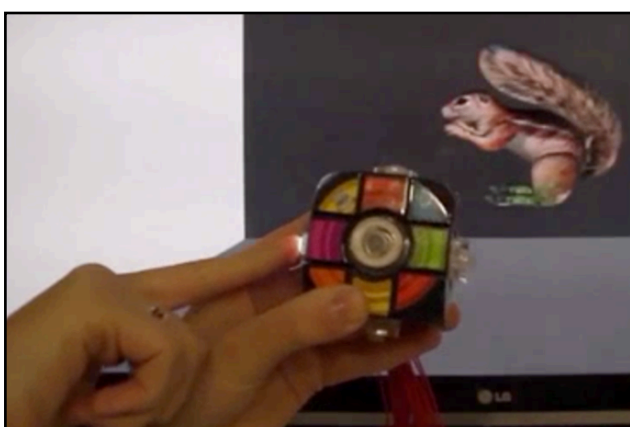
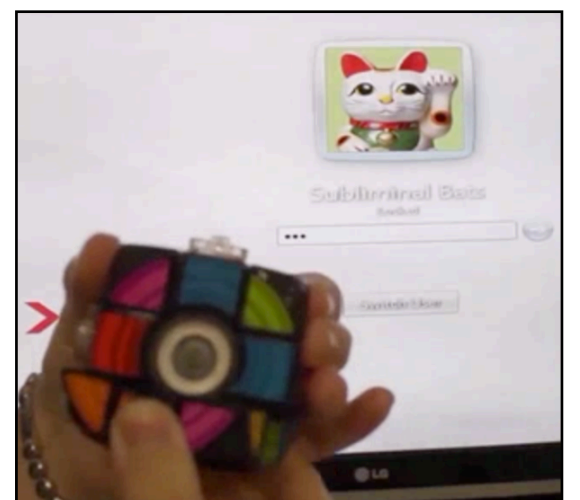
Rubikon has advantages over traditional controller such as mouse or touchpad such as high degree of freedom or direct mapping for 3D manipulation.

Our first prototype senses rotations and has a button with LED light on each center tile. It can be used as a generic controller to navigate user interfaces, e.g. switch between applications; a 3D manipulation tool; or an authentication system to unlock a computer.

UI navigation: Turning the right side performs scrolling tasks. Using the right side while holding the bottom button allows users to switch between different windows. The front side serves to rotate an image. The top side switches between tabs in a browser or serves to navigate the folder hierarchy.



Personalization: Rubikon is used as an authentication tool to unlock a computer. Each user performs its own rotation combination and presses a side button to confirm the code. The session unlocks if the correct combination has been done.



3D manipulation: Rotating the top, left and back sides produces corresponding rotations of a 3D object. The user can also press the side button to perform translation in the corresponding axis.