

SpacePoint Fusion Demo Program Instructions

Introduction

These instructions cover the FusionPointer and Seagull demo programs that operate with PNI's SpacePoint Fusion motion-tracking module. These are web-based Unity programs which have been shown to run on Windows XP, Windows Vista, Windows 7, and Macintosh OS operating systems, and should work on Linux systems. However, as these programs are free and principally intended to demonstrate the possibilities enabled with PNI's SpacePoint technology, no guarantees are made regarding their ability to operate on any specific computer configuration. Also note that performance can vary depending on the computer's graphics card.

The FusionPointer demo is well suited for demonstrating the capabilities of SpacePoint technology, while the Seagull demo is more for entertainment. This is because the FusionPointer demo provides both a pure orientation rendering mode and a pointing mode. In contrast, the Seagull demo couples both heading and roll to control the seagull's orientation, which provides an intuitive feel for gameplay but sacrifices the inherent absolute orientation aspect of SpacePoint technology.

Getting Started with the SpacePoint Demo Programs

For Windows computers, ensure Microsoft's .NET Framework is installed. Please use [dotnetx53setup.exe](#) to install this package if it is not already installed. In the event it does not install correctly, uninstall all versions of Microsoft .NET Framework, then try again.

Download the desired demo program's zip file from [PNI's website](#) and extract it.

Plug the SpacePoint Fusion module into the computer's USB port prior to launching the demo program. It is important to ensure the SpacePoint Fusion module is fully at rest for 3 seconds when plugging it into the computer's USB port, as the gyros initialize during this time. Once the module is connected to the USB port, its red and green LEDs will light up.

Launch the demo program by double-clicking on the program's .html icon. With the program running, point the SpacePoint Fusion module at your computer display and press "P" on your keyboard to set the viewpoint. You can reset the rendered orientation at anytime by pressing "P" again.

In the upper left corner of the screen you will see a box containing a series of numbers. The row labeled "q" displays the instantaneous calculated quaternion values; the row labeled "acc" displays the calculated acceleration values, in g, for each axis; while "acc.magnitude" is the magnitude of the acceleration vector (~1.0 g when the module is at rest).

FusionPointer Demo Program

The FusionPointer demo provides a 3-D rendering of the SpacePoint Fusion module that operates in two modes: Mimic mode or Pointer mode.

- In Mimic mode the image can be rotated about its center such that the rendered module will closely mimic the orientation of the SpacePoint Fusion module, assuming the viewpoint is initially aligned (by pressing the “P” button when pointing straight at the screen).
- In Pointer mode the image on the screen acts as if it were attached by a long stick to the SpacePoint Fusion module, such that changing the orientation of the module results in the image translating on the screen. When operating in Pointer mode, the image will have a bright red “+” superimposed over it. Note that the image only responds to changes in orientation, and not changes in position.

The program will start in Mimic mode. To temporarily switch to Pointer mode, hold down the left button: when the left button is released the program will be back in Mimic mode. To semi-permanently put the module in Pointer mode, double-click the left button. To exit Pointer mode, press the left button once.

By simultaneously pressing the right button on the module and twisting the module about its X-axis, you can zoom in or out on the rendered image. (i.e. the image can be either enlarged or shrunk.)

Seagull Demo Program

The Seagull demo is a 3rd person program in which the player controls the flight of a seagull around an island. A few points about the program:

- To turn the seagull, you can either turn the module in the horizontal plane (adjust yaw) or you can roll the module around its X-axis (similar to banking an airplane).
- To go faster, press the left button on the module. (Pressing the right button has no effect.)
- The “3rd person eye” acts as though attached to an elastic cord which is attached to the seagull at the other end. Consequently, when you start you’ll see the seagull from behind. When the seagull turns, you’ll see the seagull from a different viewpoint, but if the seagull then continues on a straight course you’ll soon be viewing it from behind again. Likewise, if you press the left button to go faster, the bird will move well ahead of you, but when you let go of the left button you’ll catch up.

As previously mentioned, this program is intended primarily for entertainment purposes, as it couples both heading and roll to control the seagull’s orientation. This provides an intuitive feel for gameplay but does not demonstrate the capabilities of SpacePoint technology as effectively as the FusionPointer demo.