PIANO NEXT is a program that interfaces the acoustic piano with real-time visual and sonic extensions and unfolds in two parts.

The first, *Surface Tension,* is a collaborative interdisciplinary work for computer-interfaced acoustic piano and interactive video created by myself and artist David Rokeby. In *Surface Tension*, my performance at an acoustic piano (equipped with a keyboard interface) is transformed and interpreted by a computer into real-time visual images that are projected onto a screen rising from the body of the piano. These visuals respond to a variety of performance parameters including dynamics, pitch, the harmonic relation between pitches, the use of the sustain pedal, and the duration of individual notes. This allows the piano to behave as a *visual* instrument as well as a musical one. The musical aspect is shaped partly by my response to the system's visual response to my playing. All visual activity on the screen is a response to my touch. The result is an extraordinary integration of sound and image in which neither of these elements dominate the other.

My own new compositions for "augmented" and acoustic piano delve into the space between what a piano can do and what I always *wished* it could do. At the core of each of these works is the acoustic sound of the piano, but through the delicate and seamless intervention of technology, I test (and tease) the edges of that sound, pushing it well beyond the familiar, through to the impossible.

To do this, I employ physical modelling synthesis, which allows me to manipulate all the physical variables that determine the sound character of a conventional piano such as the length of the strings, the rigidity of the sound board, the precise location on the strings where the hammers hit, the hardness of the felts on the hammers, etc. This both allows for very precise replication of the sound of particular models of piano and also for expanding the sonic character the piano outside its normal range. For example, making the virtual sound board much more rigid can dramatically increase the duration of each note's sustain, so that they ring on almost infinitely.

By using the acoustic piano to trigger this pliable piano model, and by blending these two sonorities together, I am able to push the piano's sonic possibilities into a realm I had only dreamed of, while maintaining a tangible and organic connection to the timbre and physicality of the actual instrument.

PRESENTER PROVIDES: *grand piano (in good condition), amplification, cabling to run from the laptop to the projector, power (on stage), projector (1080p preferred, 3000-4000 lumens), projection screen*

RESOURCES:

PERFORMANCE VIDEO LINK | EVE EGOYAN | DAVID ROKEBY