

About SLOrk

The **Stanford Laptop Orchestra (SLOrk)** is a large-scale, computer-mediated ensemble that explores cutting-edge technology in combination with conventional musical contexts – while radically transforming both. Founded in 2008 by director Ge Wang and students, faculty, and staff at Stanford University's Center for Computer Research in Music and Acoustics (CCRMA), SLOrk consists of more than 20 laptops, human performers, controllers, and custom multi-channel speaker arrays designed to provide each computer meta-instrument with its own identity and presence. The orchestra fuses a powerful sea of sound with the immediacy of human music-making, capturing the irreplaceable energy of a live ensemble performance and its sonic intimacy. At the same time, the orchestra makes use of the computer's precision, possibilities for new sounds and interactions to experiment with instrument design and musical expression.

Offstage, the ensemble serves as a unique classroom that explores music, computer science, interaction design, composition, and live performance in a naturally interdisciplinary way. (It's also a cross-listed course in Music and Computer Science). SLOrk uses the Chuck programming language as its primary software platform for sound synthesis/analysis, instrument design, performance, and education.

Next SLOrk Concert: June 2, 2016, Bing Concert Hall
<http://slork.stanford.edu/>

Stanford Laptop Orchestra (SLOrk) *presents* **SLOrktastic Chamber Music 2016**

May 1, 2016, Sunday 7:30 p.m.
CCRMA Stage, Stanford University



Stanford Laptop Orchestra (SLOrk)

Ensemble

Jack Atherton | Paul Batchelor, | Arushi Jain, | Sanjay Kannan
Giuliano Kornberg | Trijeet Mukhopadhyay | Tim O'Brien
Alison Rush | Kitty Shi | Chryssie Nanou | Ludwig Schubert
Nathan Tindall | Ge Wang | Ben Williams | Matt Wright

Matt Wright and Tim O'Brien, **Co-directors**
Ge Wang, **Director**

MUSIC
AT STANFORD



Center for Computer Research in Music and Acoustics (CCRMA)
Department of Music, Stanford University

The Star-Spangled Banner for Laptop Accordion

Sanjay Kannan

This rendition of the Star-Spangled Banner comprises the world concert debut of the Laptop Accordion, which may or may not be exactly what you think it is. The Laptop Accordion will be presented this summer in Australia at the 2016 Conference on New Interfaces for Musical Expression.

Ensemble Feedback Networks

Matt Wright & SLOrk

Ensemble Feedback Networks is a structured musical improvisation, where a variable number of players excite and control a sparsely-connected feedback delay network. This idea, the technology behind it, and a series of performances of realizations of this idea were the result of 2+ years of development by the CREATE Ensemble at UC Santa Barbara that Matt Wright founded and directed, and were presented to the public via a paper and triumphant performance at the 2015 New Interfaces for Musical Expression conference in Baton Rouge, LA.

Each of our unique personal instruments manipulates a received audio input, and incorporates it into the output. A digital patching matrix creates various connection topologies among the ensemble by mixing the instruments' outputs to form each instrument's input. Towards transparency, we present visualization of connection topologies and of each instrument's input/output (including spectrogram and estimates of I/O volume differential for quick and smooth timescales) to the audience.

Topologies with loops create feedback and can seem like a single group instrument whose behavior vitally depends on each performer's actions. This raises several issues: How do humans cybernetically adapt to these dynamic topologies? How to adapt our personal dynamics to the radical democratization of everybody's sound going through everybody's instruments and each member having a vital role with (some) total control at all times? What is the relationship between managing a complex system versus being managed by the system? How much control can we have over a densely-connected system? How do these challenges affect our musicianship? Tonight SLOrk will be the first to pursue these ideas outside the CREATE Ensemble.

Include Children When Baking Cookies

Ludwig Schubert, Nathan Tindall, Ben Williams

Inspired by newspaper headlines that have been shortened to a degree where they become ambiguous, this piece presents a careful exploration of a single 10 second Sitar sample.

The three players control granular synthesis in pitch, time and volume-space, interpreting and re-interpreting the sample to generate a wide, evolving range of

sonic situations. It focuses on a delicate interplay arising at the border of the intentional and the unintentional.

Set on a free-time score, "Ambiguous News" develops through gestures between the players, from the introduction of the instrument through various expressions to a calm, 7 octave spanning glide: when all uncertainty has been resolved into a single, unambiguous pitch.

Seven Stages of Evolution

Jack Atherton & Kitty Shi

Inspired by the minimalistic works of Steve Reich, we present a piece that evolves over time with the help of genetic algorithms. These algorithms are given starting and ending melodies, and must meander their way from one to the next using only population dynamics and the chance of random number generation.

Listen as the piece unfolds through seven movements:

Leader - Follower - Triangular - Robot - Basser - PopHigh - Waver

Desastre

Paul Batchelor, Arushi Jain, Alison Rush

Desastre is a conversation for three voices in darkness. Based in the Hindustani Classical raag Desh, the piece takes an improvisational excursion beyond the raag's tonal framework, moving through a shifting soundscape where three elemental forces - Arushi Jain's *Calliope*, Paul Batchelor's *Prosperoth* and Alison Rush's *Acthul* (Angel of Chaos) - collide.

Calm and Chaos

Giuliano Kornberg & Sanjay Kannan

Our piece is a contrast of minimalism and maximalism: while soothing tones draw on themes from Indian classical music, percussive shakers loop furiously throughout, fading in and out of view. At times they are united as rhythm and melody; at times they clamor for attention; and at times they simply coexist. There are no winners or losers to be chosen. There are only realities to accept.

Music for Un/prepared piano and laptops

Trijeet Mukhopadhyay & Chryssie Nanou

This piece is a constant dialogue between laptop and piano, exploring the unprepared and prepared nature of both the piano and the laptop. All sonic material is generated physically by the humans on stage – attempting to mix in real physical sounds on an instrument and imaginary ones on the laptops. Unreality as a process and result.