

Xiaomian Yang is a SLOrkian convert from classical music. While she enjoys playing Mozart and Faure on the flute, she became curious about human-computer interactions to create music that builds a bridge between technology and people. So she has abandoned classical music (for now) to explore the chaos of computer music. Outside of SLOrk, Xiaomian is a sophomore majoring in Materials Science and Engineering. She is a plant nerd and is currently planting her very own succulent empire.

Marise van Zyl is.

Andrew Zhu Aday is a second-year graduate student at CCRMA. His interests include algorithmic composition, Chinese traditional music, and audiovisual design for VR.

Mike Mulshine (he/him) is a composer-songwriter-performer whose work interrogates and subverts traditional musical relationships and explores themes of emotional vulnerability, identity, and group belonging. He produces interactive audiovisual works that aim to expose accessible, engaging, and empowering new modes of experiencing or (co-)creating media. These range from web-based interactive albums to physical sound installations embedded in everyday spaces. Previously, Mike was deeply involved in the Princeton Laptop Orchestra. Now, while pursuing his PhD at CCRMA, it's an honor to get to know the west coast's premier laptop ensemble.

Trijeet Mukhopadhyay is a new-media artist and product designer. He gets excited about computation as a medium, particularly about tools that enable creative expression and new ways of thinking. Currently — alongside serving as a co-director for SLOrk — he works at airplane.dev building software that makes it easier for people to build more software, so they can get back to what matters. As an artist, he works with synthesizers and computer-based instruments to create alternate spaces for the mind to wander in — often with visual or physical elements blended in. Trijeet is an alum of Stanford's Computer Science HCI program. One fateful spring during his freshman year in 2014, he had the (mis?)fortune of discovering SLOrk. He has been with the group ever since.

Ge Wang is an Associate Professor at Stanford University's Center for Computer Research in Music and Acoustics (CCRMA). He researches the artful design of tools, toys, games and social experiences. Ge is the architect of the Chuck music programming language and the director of the Stanford Laptop Orchestra. He is the Co-founder of Smule and the designer of the Ocarina and Magic Piano apps for mobile phones. A 2016 Guggenheim Fellow, Ge is the author of *Artful Design: Technology in Search of the Sublime*, a comic book about how we shape technology—and how technology shapes us.

Dr. Matthew Wright (he/him) is a media systems designer, improvising composer/musician, computer music researcher, father of an energetic 5-year-old, alopecia survivor, and the Technical Director of Stanford's Center for Computer Research in Music and Acoustics (CCRMA). His research has included real-time mapping of musical gestures to sound synthesis, helping develop and promote the Sound Description Interchange Format (SDIF) and Open Sound Control (OSC) standards, computer modeling of the perception of musical rhythm, and musical creation with technology in a live performance context. As a musician, he plays a variety of traditional plucked lutes, Afro-Brazilian percussion, and computer-based instruments of his own design, in both traditional music contexts and experimental new works.



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 Ge Wang with students, faculty, and staff at Stanford University's Center for Computer Research in Music and Acoustics (CCRMA), SLOrk consists of laptops, human performers, controllers, and custom speaker arrays designed to provide each computer-based 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 performance ensemble and its sonic presence. At the same time, the orchestra makes use of the computer's capabilities to experiment with sounds, instruments, and new forms of musical expression. Offstage, SLOrk is a unique classroom that explores music, computer science, interaction design, composition, and live performance in a naturally interdisciplinary way. <http://slork.stanford.edu/>

Tonight's instruments were crafted using the following tools: Chuck, Processing, OpenSoundControl, Max/MSP, Node.js, p5.js, MAUI (miniAudicle UI), matplotlib, Ableton Live, bash, Audacity, Freesound.org, Valhalla SuperMassive, Logic Pro, Zoom, lamps, and love.

Stanford Laptop Orchestra (SLOrk) presents 2022: The Return of the SLOrk



June 4, 2022, Saturday 7:30pm
Bing Concert Hall, Stanford University

Ensemble

Egor Alimpiev | Grant Bishko | Kelly Cochran
Sam Lowe | Tess Rinaldo | Kathlynn Simotas | Xiaomian Yang
Kathleen Yuan | Andrew Zhu Aday | Marise van Zyl

Director

Ge Wang

Co-directors

Matt Wright, Trijeet Mukhopadhyay, Mike Mulshine

Livestream & Cameras

Constantin Basica, Kunwoo Kim, Dave K.



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Program & Bios

Everybody SLOrk Now (2022) *Ge Wang (C++ Music Factory)*

What happens when we re-synthesize, network, and spatialize C+C Music Factory's 1990 hit song "Gonna Make You Sweat (Everybody Dance Now)"—in the ChuckK music programming language and for a laptop orchestra? Let's find out.

Sit by the Fire (2022) *Trijeet Mukhopadhyay*

Close your eyes, or not—up to you. Hum along, if that calls to you. Try not to think too much about what these people are doing on their computers. Breathe in, breathe out. Repeat. Be.

Music for 9 Computers (2022) *Tess Rinaldo & Andrew Zhu Aday*

Music for 9 Computers is a three-part audiovisual piece that explores the relationship between nature, human civilization, and the rapid advancement of technology. This work was inspired in part by Steve Reich's Music for 18 Musicians.

Trumpet Solo From "An American Elegy" (2000/2022) *Kelly Cochran*

Frank Ticheli composed the piece "An American Elegy" in memory of those who died in the 1999 Columbine High School massacre. The piece is an intimate experience of grief and, in Ticheli's words, "above all, an expression of hope." A central moment of the piece is a mournful, distant trumpet solo—typically performed by a player located far away and out of sight from the audience and the ensemble. This SLOrk composition reimagines this moment in the original piece by placing the soloist and the ensemble as two distinct but connected halves of a hemispherical speaker set, allowing the music to feel like a conversation of sorts between the two sides and suggesting new nuance within the piece's dual emotions of grief and hope.

In My Mind Are All the Tides (2022) *Sam Lowe & Egor Alimpiev*

"Nothing simply vanishes. I pictured it as a sort of energy flowing out of the world and I thought that this energy must be going somewhere. That was when I realized there must be other places, other worlds." - The Prophet

We are not bastions unto ourselves, but lone sounds in the dark. What we gain in concert with one another, and how we choose to exploit, or share, the gifts we find ourselves with, is what truly defines our mark.

"Imagine water flowing underground."

Gemini (2022) *Mike Mulshine*

Originally composed for a traditional jazz trio context (piano, bass, drums), Gemini explores the vulnerable act of turning yourself inside out, showcasing your inner world for all the world to see.

Inside/Outside (2022) *Kathlynn Simotas & Kathleen Yuan (the Kathls)*

During this four-part soundscape odyssey, let us lead you from inside Bing Concert Hall today, through city streets, the great outdoors, and far beyond. Inside/Outside is a musical journey and expression of interconnectedness, for what is inside, what makes us up and brings us together today, also forms the threads that tie us to the larger universe.

The Werewolf Among Us (2022) *Grant Bishko & Xiaomian Yang*

Inspired by the game One Night Ultimate Werewolf, the SLOrkers embark on a sonic journey through a medieval village to uncover a werewolf who hunts in the night. Will they distinguish who is lying, who the imposter is among them?

"I think you're muted" (2022) *Marise van Zyl*

In a world that has been (socially) distanced by a pandemic, Zoom kept us connected. This piece reflects on the wonderfully terrible world of video conferencing and all the technical glitches, the awkward silences, and the common phrases that became a part of our lives.

Selections From Chromosome 7 (2022) *Kelly Cochran*

The human genome—the genetic blueprint for all of the complexity of human life—is composed of the letters A, C, G, and T. For decades, biologists have searched for patterns amongst the sequences of letters in the hopes of explaining how everything hereditary about us as a species is encoded in just four characters. While many mysteries remain unsolved, there is one extremely important scientific question we will finally answer tonight: if our genome was a musical composition, what would it sound like? This piece is centered around a four-note pulse that is playing real sampled sequences from chromosome 7 of the human genome. Additional epigenomic data collected from human cells forms the basis of the ebbs and flows above the pulse; players shape the sound generated from this data to bring the piece to life.

All data used is publicly available at encodeproject.org (genome version hg38, K562 histone ChIP-seq datasets with IDs ENCSR000EKS, -APC, -EWB, -EWC, -DWD, -EVZ).

Egor Alimpiev is an undergraduate senior in the Department of Mathematics. In his spare time, he enjoys making sounds and listening to creepy stories on Youtube. Someday he hopes to own a kitten named Cronut (Croissant Donut).

Grant Bishko is a junior studying music with a minor in computer science. He is fascinated by the intersection of music and technology, and is super excited to be in SLOrk this year. Beep boop!

Kelly Cochran thinks program bios should be in first person. I'm a Computer Science Ph.D. student who also identifies as a Frank Ticheli stan. I'm particularly obsessed with brass instruments and wind bands – I am who I am thanks to years of conducting and playing trumpet, euphonium, and more throughout high school and in the Duke Marching Band and Wind Symphony.

Sam Lowe is a masters student in the Department of Engineering who has been running away from his professed aim of AI research by hiding out in CCRMA classes since matriculating last year. Usually his bios say "Sam is interested in the intersection of music, technology, and design" as a way to stand out from the crowd, but that doesn't do him much good in this context. Sam is also the co-founder of Reality Recycling Center, a design firm interested in exploring our evolving relationship with tech.

Tess Rinaldo is a multimedia artist and software engineer. She used to think she wanted a neuroscience PhD but now spends her time making beeps and boops instead. Tess was an undergraduate major in Symbolic Systems and is currently finishing her Master's degree in Computer Science.

Kathlynn Simotas is a master's student at CCRMA and on any given day a combination of the following: composer, vocalist, astrophysicist-in-training, science fiction enthusiast, writer, cat lover, amateur philosopher, and human trying her best. Originally from San Francisco, she completed bachelor's degrees in physics and music at Stanford in 2021 and will be starting a PhD in astrophysics within the next year. Her aspirations are to combine music and science to learn and make cool stuff that makes them both accessible and fun to people of all backgrounds. She is extremely excited and grateful to be a part of SLOrk after years of wanting and waiting!

Kathleen Yuan is a design researcher and new media sound artist from the San Francisco Bay Area. Their work takes the forms of participatory VR music platforms, audiovisual installations and performances, and new musical interfaces for group participation and reflection. Currently, they are completing their M.A. in Music, Science, and Technology at Stanford University's Center for Computer Research in Music and Acoustics (CCRMA).