




Instrument Builders, Co-Composers, and Performers (in alphabetical order):  
Caleb Bittenbender, Ivica Ico Bukvic, Tanner Collins, Rebecca Kenealy, William Rhodes,  
Zaire Riddick, Carter Roberts III, Jacob Alan Smith, Alex Turse, Cadem William  
Vandervort, Philip Watson, and Adrew Wickman

Developed and Directed by the L2Ork Founder and Director Ivica Ico Bukvic

#### Program Notes:

 (pronounced as “4th Beat”) is the ensemble’s second crowdsourced work written for the L2Ork’s Tweeter platform (see <https://bit.ly/L2Ork-Tweeter> for more info) that was developed in response to the COVID-19 pandemic. It continues to explore qualities of a pulse-based electronica in a synchronous telematic (online) format while leveraging a unique environment in which each composer-instrument-builder-performer is responsible for a small component of the overall musical fabric. *4th Beat* is absolute in its conception, driven purely by the collaboratively developed musical ideas. Its three-part form is infused with improvisatory sections evocative of a crowdsourced live DJ session. *4th Beat* leverages Tweeter’s unique ability to defy the latency and sync limitations associated with live online collaborative performance to test creative and technological limits of the ensemble.

#### About L2Ork:

Named as one of the top six national transdisciplinary exemplars ([a2ru](#), 2015), and one of the top eight research projects at Virginia Tech ([DCist](#), 2014), a contemporary multimedia ensemble Linux Laptop Orchestra or [L2Ork](#) (pronounced as 'lohkr'), explores unique form of collaboration found in the western classical orchestra through the use of innovative human-computer interaction technologies for the purpose of exploring an integrative approach to design, engineering, arts, and science.

Founded by Dr. [Ivica Ico Bukvic](#) in May 2009, L2Ork is part of the interdisciplinary initiative by the Virginia Tech Digital Interactive Sound & Intermedia Studio ([DISIS](#)) and the Institute for Creativity, Arts, and Technology ([ICAT](#)). As the world’s first Linux-based laptop orchestra incorporating extensive study of gesture and Taiji (Tai Chi) choreography and other extended performance techniques L2Ork offers optimal infrastructure for creative research at minimal cost. By providing a seamless integration of arts and sciences it is in part designed to bridge the gap between STEM and the Arts, with particular focus on K-12 education.

Since its inception, L2Ork has helped start seven laptop orchestras in North and South Americas, many of which rely heavily on its affordable design. L2Ork's infrastructural backbone [Pd-L2Ork](#) visual programming environment with its unique K-12 learning module has been utilized in dozens of K-12 Maker [workshops](#), including the 2014 Raspberry Pi Orchestra summer gifted program and is currently used around the world by thousands of artists, designers, researchers, and educators. In 2020, the ensemble introduced [L2Ork Tweeter](#), its new free and open-source online platform for collaborative instrument design, ideation, improvisation, composition, rehearsal, and performance.

<http://l2ork.music.vt.edu>