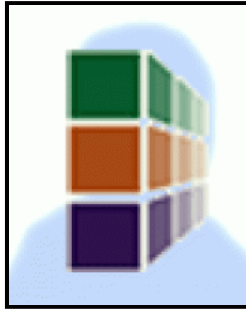




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Special Guest Lectures

At the Intersection of Music and Computer Science (and Mobile): Chuck, Laptop Orchestras, and iPhone Ocarinas

Ge Wang, Stanford University

Johnston Hall 338
April 13, 2009 - 02:30 pm

Abstract:

We present Chuck, a new programming language and paradigm for precise and rapid experimentation of computer audio/music for composition, performance, and pedagogy. The tenets of Chuck include a "strongly-timed" programming model, and support for live coding - a way to rapidly experimenting with audio programs (i.e., as they run). Overall, the framework provides a different way of thinking about how to create, explore, and work with sound and music via code. In this context, we describe our adventures with the "laptop orchestra", a new type of large-scale, computer-mediated music ensemble and classroom. The laptop orchestra consists of twenty sets of laptops, humans, special hemispherical speakers, sensors, and software. It presents new challenges and opportunities in instrument design, programming, composition, performance, and learning about computing and music. We present our ongoing adventures with the Stanford Laptop Orchestra (SLOrk) and the Princeton Laptop Orchestra (PLOrk). Finally, drawing from both Chuck and the laptop orchestra, we chronicle our exploration into mobile music, with the Stanford Mobile Phone Orchestra as well as our experience building new types of musical artifacts for smart phones (e.g., the iPhone). I will discuss designing Smule's Ocarina, which transformed the iPhone into a wind instrument, which allows hundreds of thousands of users to listen to each other play around the world, in a new expressive social medium.

Speaker's Bio:

Ge Wang is currently an assistant professor at Stanford University in the Center for Computer Research in Music and Acoustics (CCRMA). His research interests include interactive software systems for computer music, programming languages, sound synthesis and analysis, new performance ensembles (e.g., laptop orchestras and mobile phone orchestras) and paradigms (e.g., live coding), mobile music, interfaces for human-computer interaction, interactive audio over networks, and methodologies for education at the intersection of computer science and music. Ge is the chief architect of the Chuck audio programming language, and was a founding developer and co-director of the Princeton Laptop Orchestra (PLOrk). He is the founder and director of the Stanford Laptop Orchestra (SLOrk), and of the Stanford Mobile Phone Orchestra (MoPhO). Ge composes and performs via various electro-acoustic and computer-mediated means. Ge is also the Co-founder, CTO, and Chief Creative Officer of Smule, a startup exploring interactive sonic media for mobile platforms, including the iPhone. Ge designed Ocarina, which transformed the iPhone into a flute-like instrument that allowed its users to listen to each play around the world. <http://ccrma.stanford.edu/~ge/>

