Music 256b | CS 476b
Mobile Music (Music, Computing, Design II)
Winter Quarter
Instructor: Ge Wang (http://ccrma.stanford.edu/~ge/)

class time: MW 3:15 - 5:05pm
location: CCRMA Stage (Knoll 3rd floor)
prerequisite: Music 256a / CS 476a: Music, Computing, Design

Description
This course focuses on the design, aesthetic, and implementation of mobile music, centered on the modern super smartphone (e.g., iPhone) and explores both the similarities and intrinsic differences between mobile and traditional computing and design for music. Topics include mobile software design, social/cloud computing, mobile interaction design, experiential design for music, and programming (iPhone SDK + CCRMA's open-source Mobile Music Software Toolkit). Coursework includes several medium-sized design/programming assignments, and a final project. Prerequisite: Music256a / CS476a.

NOTE: This course will use the iPhone as the primary programming platform, and will focus leveraging real-time audio, interaction, graphics, and GPS/location in the service of music. However, this is not a general iPhone programming course (nor is prior iPhone programming experience necessary). The focus is on the design, aesthetic, and development of cutting-edge musical software for mobile (we will learn whatever we need towards that goal).

Topics include:
- music + interaction + social design for mobile devices (e.g., iPhones)
- real-time audio/interaction/graphics/location programming
- multi-touch interaction design
- wide-area, locative mobile + cloud computing systems
- technology and aesthetics of social music
- case studies of mobile music research and industry (e.g., Smule)
- hands-on building of mobile/musical software
- "ubiquitous" music

Logistics:
- 2 lectures per week
- 3 medium size programming assignments
- large final project (video demos of all projections near the end of class)
- tutorials + hack sessions (organized as necessary)

Grading:
- 50% homework projects (total of 3)
- 30% final project (and presentation)
- 20% proposal + milestone presentations + participation

Assignments (subject to change)**:**

• homework #1: *iPhone Programming Lab: Audio + Interaction*

• homework #2: *SonicSlingShot* (real-time audio, multi-touch interaction, graphics, physical simulation)

• homework #3: *Design + Build Your Own Instrument* (interaction design leverage interaction, audio, and graphics)

• final project: design and prototype a social, locative, and interactive musical experience, leveraging mobile devices, and elements of cloud computing.