Mike Roberts
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"Harnessing the Creative Power of Drones"

Thursday, November 10, 2016
3-4pm
CIT 477, Lubrano Conference Room

Abstract: Drones are becoming a popular camera platform due to their maneuverability, small size, and low cost. Indeed, drones are being used to film scenes in a growing number of Hollywood movies, and are emerging as a powerful tool for 3D content creation. However, drones remain difficult to control, both for humans and for computers. In this talk, I will present my ongoing work aiming to enable humans to use drones more expressively, focusing specifically on cinematography and 3D modeling. I will begin by presenting an interactive tool for designing drone camera shots, describing the key insights and algorithms that inform its design. I will show examples of ambitious aerial cinematography that have been created using this tool, by users with absolutely no experience flying drones. I will then present my ongoing efforts to build a fully automatic, end-to-end system for scanning large outdoor scenes in 3D using off-the-shelf consumer drones.

Mike Roberts is a fifth-year PhD candidate in the Computer Graphics Laboratory at Stanford University advised by Pat Hanrahan. Mike's work is at the intersection of computer graphics and robotics, where he focuses on using drones to support human creativity. Mike has interned at Harvard University, Skydio, and most recently at Microsoft Research. Mike's joint work with the Harvard Center for Brain Science was published on the cover of Cell in 2015, and has been featured in BBC Horizon, The Guardian, Huffington Post, National Geographic, Nature News, The New York Times, and Popular Science. In 2013, Mike co-developed the Introduction to Parallel Programming course at Udacity, which has enrolled over 80,000 students.