3D phase microscopy with scattering samples

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Abstract: Computational imaging involves the joint design of imaging system hardware and software, optimizing across the entire pipeline from acquisition to reconstruction. Computers can replace bulky and expensive optics by solving computational inverse problems, or images can be reconstructed from scattered light. This talk will describe new microscopes that use computational imaging to enable 3D measurements using simple hardware that is easily adoptable and advanced image reconstruction algorithms based on large-scale optimization and learning.