

Universal Conditional Gradient Sliding

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Abstract: In this presentation, we will review the history of first-order projection-free algorithms as well as present a novel first-order projection-free method, namely, the universal conditional gradient sliding (UCGS) method. The proposed UCGS method will be shown to have theoretical improvements in both the linear optimizations and gradient evaluations required to obtain an ϵ -solution to convex differentiable optimization problems. Within the class of sliding-type algorithms, to the best of our knowledge, this is the first time a sliding-type algorithm is able to improve not only the gradient complexity but also the overall complexity for computing an approximate solution. We conclude by discussing the practical benefits of UCGS as well as a few numerical experiments to justify its use.

Talk will take place on July 14, 2021 from 1:00PM - 2:00PM through Zoom.