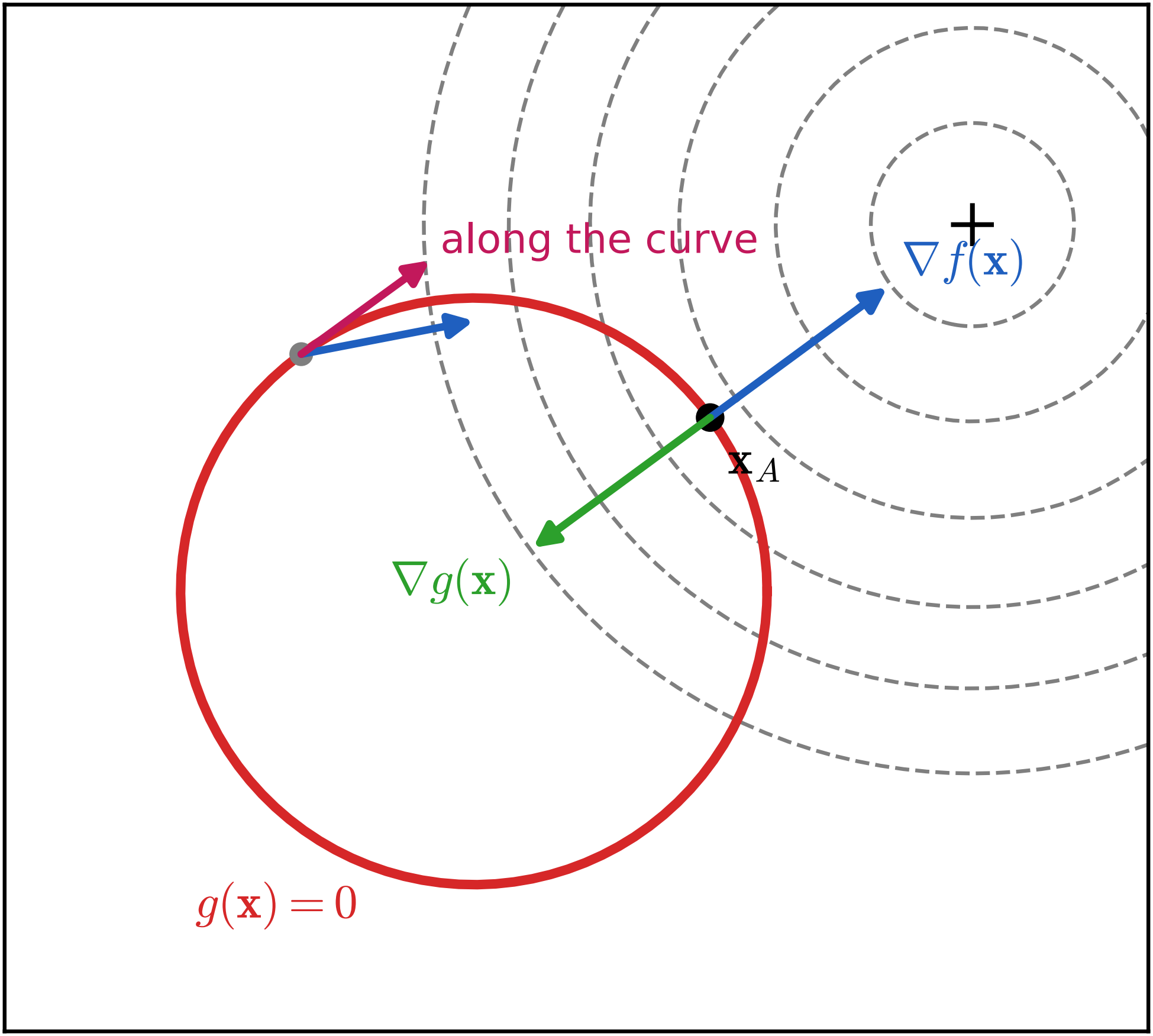

along the curve
$\nabla f(\mathbf{x})$
$\mathbf{x}_A$
$\nabla g(\mathbf{x})$
$g(\mathbf{x}) = 0$