Singular integrals comprise a rich area of analysis, the most well known example being the Hilbert Transform. In this talk, we will discuss a singular integral that also intersects geometric measure theory. For functions $f: \mathbb{R}^n \to \mathbb{R}$ that are $C^{1,1}$ (i.e. the first derivative is Lipschitz continuous) for which 0 is a regular value (i.e. the gradient $\nabla f$ does not vanish on the 0-level set) and whose 0-level set is bounded, our singular integral computes $H^{n-1}(f^{-1}\{0\})$, the $(n-1)$-dimensional Hausdorff measure of the 0-level set of $f$. We will also discuss the simple analysis problem from which the integral is derived and our current work in this area.