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Douglas Cenzer (cenzer@ufl.edu), Department of Mathematics, University of Florida, P.O. Box 118105, Gainesville, FL 32611-8105, and **Diego A. Rojas*** (darz0545@ufl.edu), 1132 SW 11th Ave, Gainesville, FL 32601-7841. *On the Computational Complexity and Randomness of Derivatives of Online Functions*. Preliminary report.

Recently, the study of algorithmic randomness has become increasingly significant in logic and theoretical computer science. Current research has defined a notion for random continuous functions, and the integrals of these functions have been investigated. However, the derivatives of these random continuous functions have not been explored or even defined. In this paper, we provide a notion for the derivative of continuous functions on $2^{\mathbb{N}}$. Furthermore, we discuss the implications of this derivative definition for online functions in computational complexity and randomness. Finally, we establish some connections between online functions and their derivatives on $2^{\mathbb{N}}$ and functions on \mathbb{R} and their derivatives, where we can represent real-valued functions as functions acting on the dyadic representation of real numbers under an online function. (Received September 20, 2016)